FEBRUARY 5, 1955

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MANAGEMENT • PLANT • TRAFFIC • COMMERCIAL • LEGAL • ACCOUNTING •

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

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Guaranteed Circulation This Issue

10,496 of Which 9,988 Is Paid

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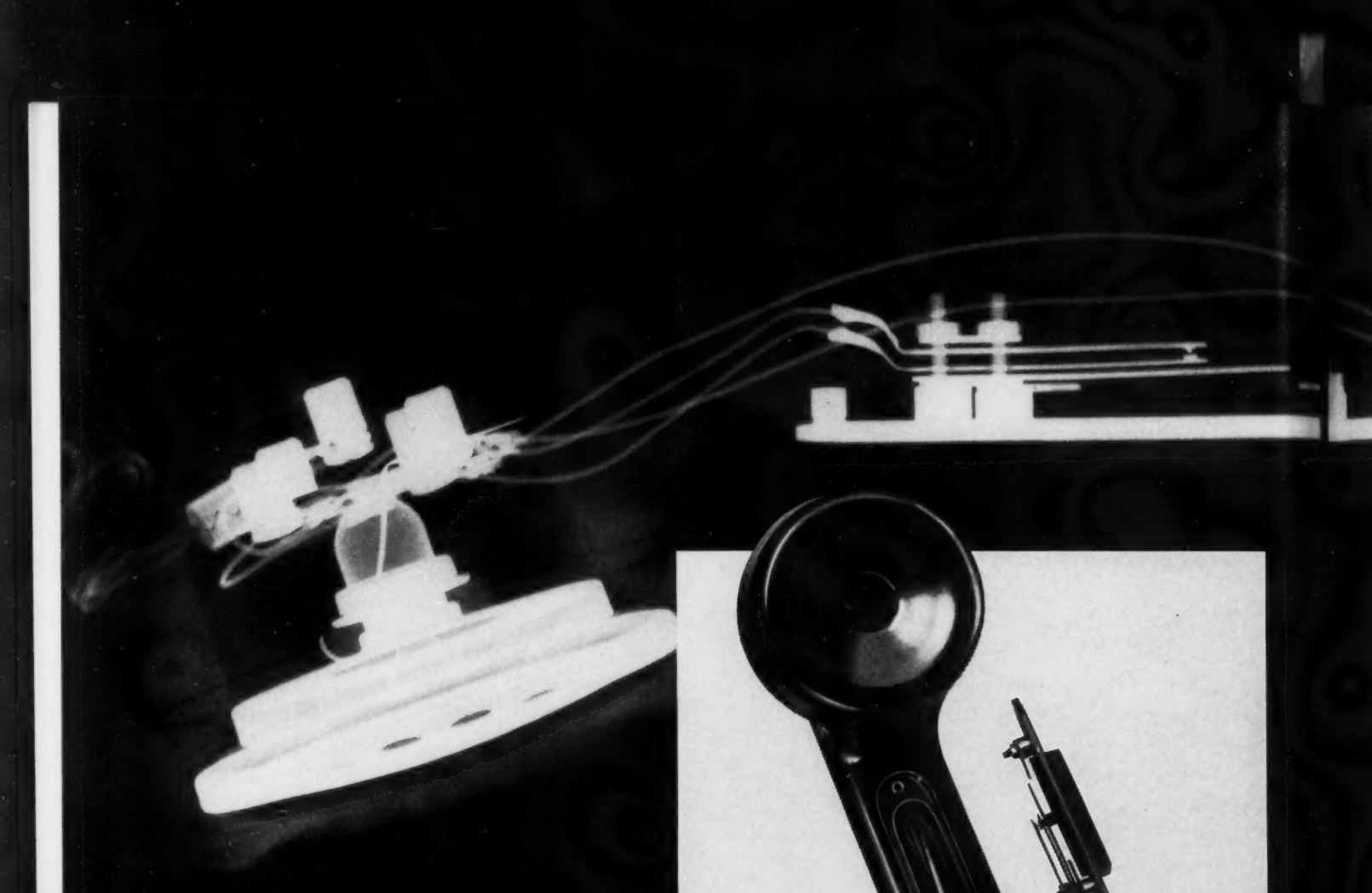


Still another service from America's most modern phone

(fits standard "1400" or "1500" telephones)

WITH THESE 3 SPRING COMBINATIONS

BREAK

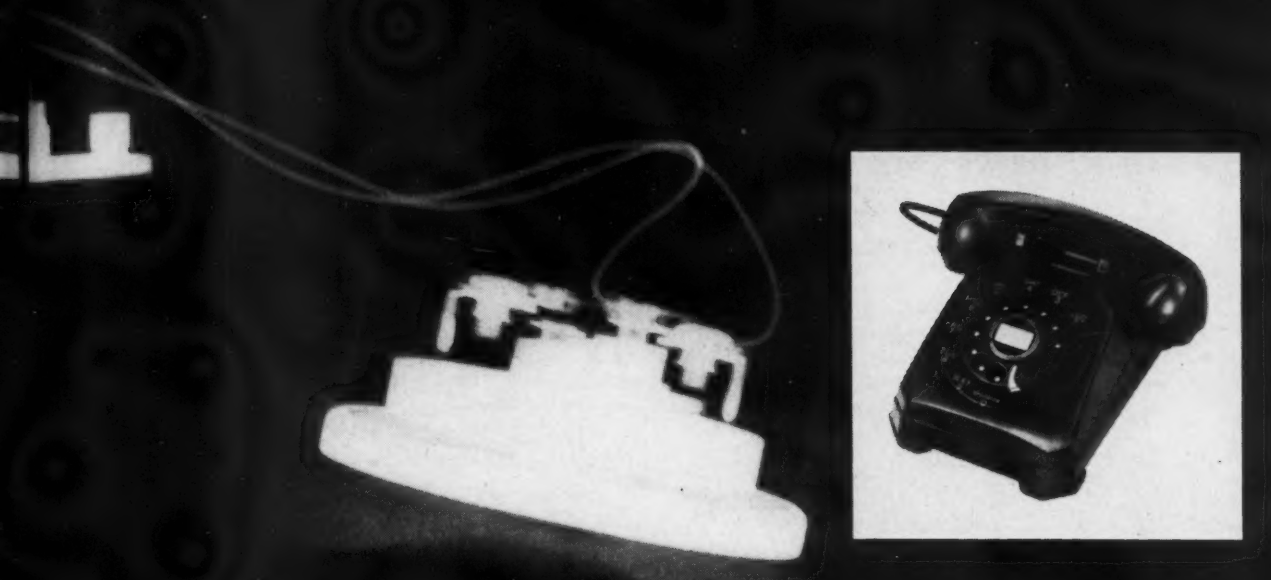
to cut out the transmitter, improves hearing in noisy locations

MAKE

for "push-to-talk" operation . . . a battery-saving feature

TRANSFER

allowing for extra leads to control other functions, such as two-way radio



The *New* Stromberg-Carlson Rocker-type Transmitter Switch

Stromberg-Carlson developed this switch for specialized uses in the independent industry. Known usually as a "push-to-talk" device, our switch has a variety of other features so that it must also be called "push-to-listen" and "push-to-do-a-lot-of-things"!

Note that the switch is rocker (or bar) type—providing positive contact no matter where it is pressed, nor by which finger of the user's hand. This feature is a great preventer of fatigue, when the handset is used for a long period.

Note also the *twin* contacts—a traditional Stromberg-Carlson feature.

The possible uses of this new handset are legion. Ask your nearest representative to discuss how you may use it to provide specialized subscriber service with increased revenue.

Stromberg-Carlson®

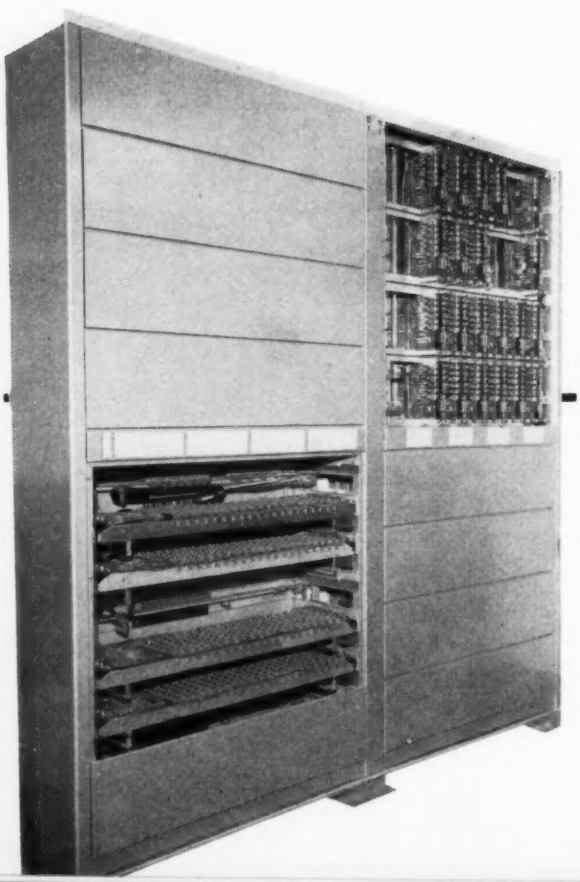
ROCHESTER 3, NEW YORK

Sales Offices: ATLANTA 3, CHICAGO 6, KANSAS CITY 8, ROCHESTER 3, SAN FRANCISCO 3. *Manufacturing Branch*: DALLAS, TEXAS.

CONSIDERING DIAL?

Then look to KELLOGG for the switching system that's just right for your requirements

It makes good sense to contact Kellogg if you are considering dial conversion, because Kellogg offers you the most comprehensive line of dial switching equipment to choose from in the Independent field today. Whether your operation is large, medium or small, whether your budget is a generous or modest one—there's a Kellogg dial switching system that can be tailored to your specific needs. These two pages will give you an idea of what we can do for you, and more detailed information is offered in the coupon below.



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• Practically Eliminates Routine Maintenance • Drawer Mounted Switches • Lower Installation Costs for Additions • No Multiple Wiring • Full Station Intercept • PBX Grouping Service (without using consecutive numbers) • Maximum Expansion • Instantaneous Seizure of Paths without Hunting • High Traffic Capacity • Extra Long Life • Adaptable to Inter-Toll Dialing

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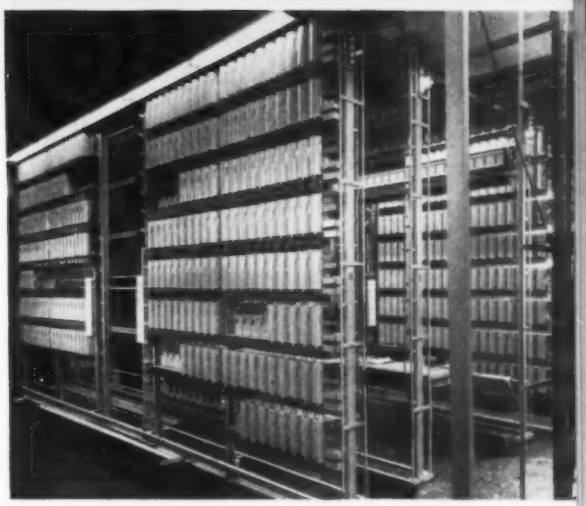
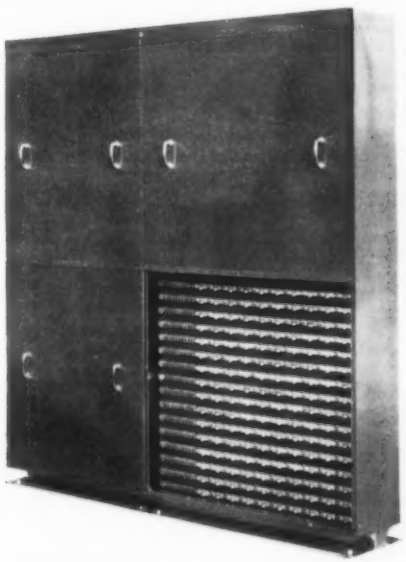
• Long Life, Low Cost Operation • Ease of Maintenance • Simplicity of Equipment and Circuits • Compact Space-Saving Arrangement of Equipment • Trunking Flexibility • Ready, Low-Cost Expandability for Increased Station and Traffic Requirements • Each Switch a Separate Unit, Easy to Check and Adjust • Highest Service Standards



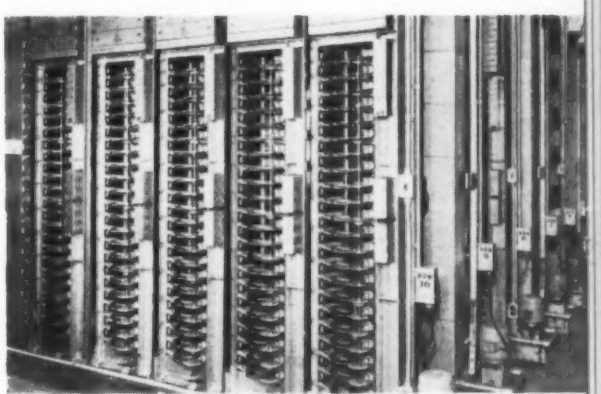
RELAYMATIC

• Dependable Automatic Switching • Accomplishes Complex Switching Operations Smoothly, Quietly • Simplified Installation • Easy Maintenance—All Wiring and Components Instantly Accessible • Simplified Wiring • Operates With Any Type of Trunk Line • Line Circuits May be Assigned for Common Battery Local or Rural, Trunk or Pay-Station Service • Local Lines Provide Up to 10-Party Selective Divided Ringing • Adaptors Available for Grounded Rural Lines



7-A2 ROTARY

• Motor Driven • Register-Type System • Revertive Pulsing • Rugged Construction • Extremely Long-Life • Especially Adaptable to Large Exchanges • Large Trunk Groups • Adaptable to Inter-Toll Dialing



MAIL COUPON to get complete facts on Kellogg Dial Switching Equipment. Your inquiry will receive immediate attention.

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☐ Step-by-Step ☐ 7-A2 Rotary
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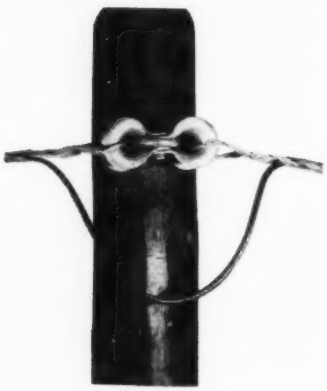
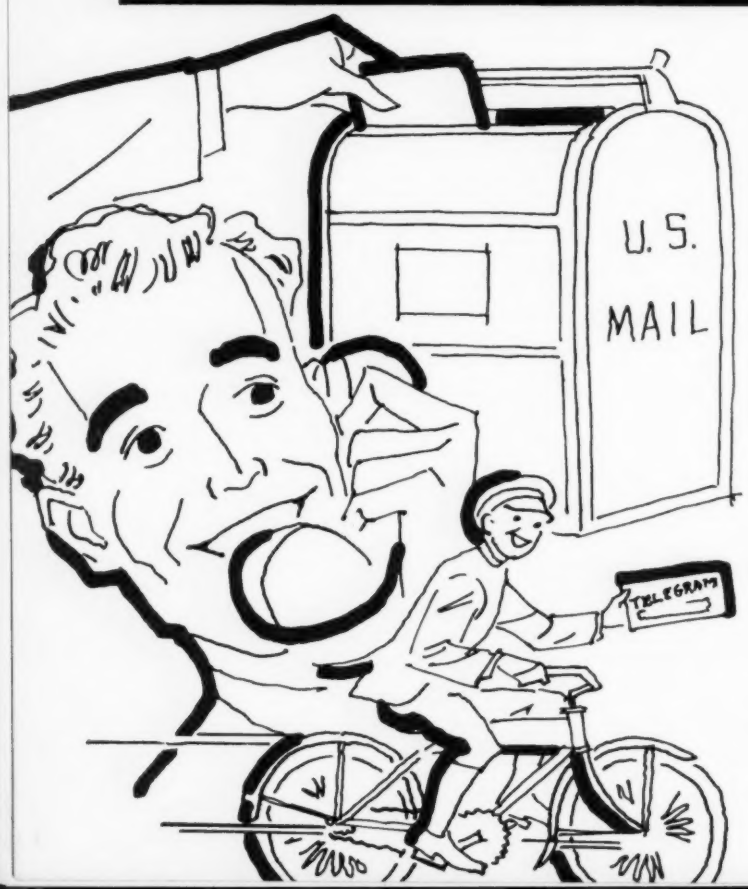
Simple, Lightweight Fastening Tools assure split-second fastening into steel and concrete. Hundreds of different applications—in all types of building. Replaces the slow and costly method of plugging and chipping into concrete and masonry. RAMSET FASTENERS, INC.

Tailored for Needs of Telephone Industry—the 630-T Volt-Ohm Milliammeter is designed for work inside on panel, checking circuits on pole, etc. Supplied with adjustable neck strap, hand strap and special test leads. THE TRIPLETT ELECTRICAL INSTRUMENT CO.

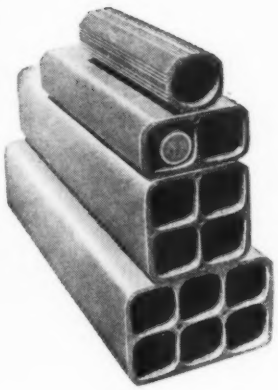


Dead-Ends for Plastic Cable—Specially designed for thermoplastic insulation, this type of fitting protects while firmly holding cable in elongated grip in which the unit pressure is small because of large area of gripping surface. PREFORMED LINE PRODUCTS CO.

KELLOGG *for Line Supplies*

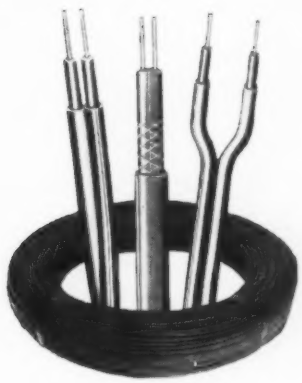


• Write, 'phone or wire all orders for Line Supplies to your nearest Kellogg Warehouse. Kellogg's stocks of guaranteed line supplies are complete--shipments are made immediately. Save time and money--send *one* order to *one* source--KELLOGG!

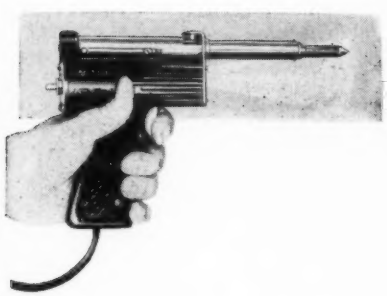


Single and Multiple Natco Clay Conduit for the permanent protection of underground telephone, telegraph, signal, power and lighting cables against fire, corrosion, electrolysis, mechanical injury and chemical attack. A product of NATCO CORPORATION.

First Choice of the Telephone Industry! The Raytheon RectiChargeR is fully automatic, maintains constant output voltage regardless of variation of load and line voltage. Never overcharged or undercharged, batteries last longer. RAYTHEON MANUFACTURING CO.



Long Service Life and Low Plant Costs go hand-in-hand with the installation of ENDURPRENE — The Neoprene Drop Wire available in both Copperweld and Bronze. This flexible and easy to handle wire is made by GENERAL INSULATED WIRE WORKS, INC.



Pull Trigger—Heats in Seconds to required temperature. TRIG-R-HEAT Electric Soldering Guns are equipped with 10-watt spotlight, separate switch and Steel Clad Tips. Wattage range from 650 to 150. Operate on AC or DC current. Made by P. WALL MFG. COMPANY.

Extra-Life Telephone Battery — PlastiCal (lead calcium grids) have expected life of 25 years in full-float service. Plasti-Cell (high tensile special alloy grids) have a life expectancy of 14 years. Made by C&D BATTERIES, INC.

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when it
comes to
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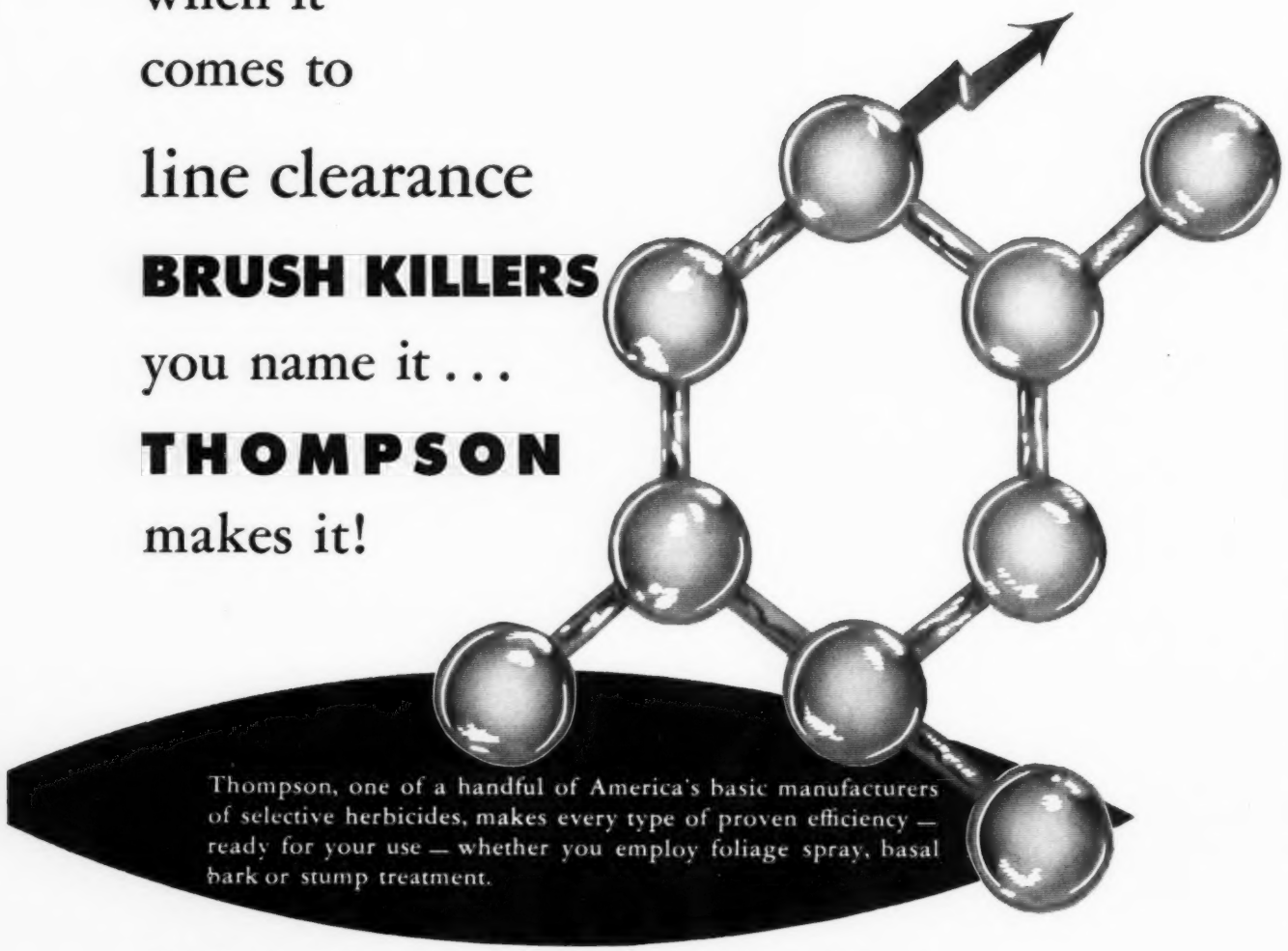
BRUSH KILLERS
you name it . . .
THOMPSON
makes it!



Thompson, one of a handful of America's basic manufacturers of selective herbicides, makes every type of proven efficiency — ready for your use — whether you employ foliage spray, basal bark or stump treatment.

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CONTROLLED VOLATILITY

BROAD SPECTRUM — PENTYL ESTERS

BRAMBLCIDE
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BROAD SPECTRUM . . . or LOW VOLATILE . . . whichever you prefer, Thompson's delivers *more kill per gallon* because every gallon is fortified with a new and exclusive surfactant perfected in the Thompson laboratories. No other "creeping agent" duplicates its performance.

MORE GALLONS PER DOLLAR . . . when you specify Thompson you get a finished product from the basic producer . . . your most economical method of buying.

for most efficient kill at lowest cost*

NEW!

Thompson's exclusive Poison Ivy-Oak Bomb. Shoot noxious plants dead — roots and all. Stop future regrowth. Place a bomb on each truck for linesmen's use. $12.00 (case of 12 bombs)

SPECIFY . . . Thompson Chemicals — FIRST NAME IN BRUSH KILLERS

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Buckeye Telephone & Supply Co.
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**Write for station paper 19. It provides latest research on right of way herbicides, their selection and application.*

Note / *Our long experience in working with both utilities and the public is your assurance of dependable work and good customer relations.*

Bartlett scientists lead in tree research . . .

First
to introduce a complete, balanced shade tree food—"Bartlett's Green Tree Food"—and to devise feeding through holes in the ground.

First
to use power spray equipment for shade trees and to develop a practical method of reinforcing weak trees with eyebolts and cable process.

First
to produce a satisfactory flexible material for filling tree cavities. "Flexifil" has almost the same expansion coefficient as wood.

First
to introduce a special type of "Heal Collar" to expedite the growth of smooth, even new bark over the filler used in cavities.

First
to develop the "Invigorator Process"—sub-irrigation of shade trees with liquid food and conditioning chemicals under high pressure.

First
to maintain Tree Research Laboratories with a highly trained staff of nationally known scientists to study shade tree problems.

First
to successfully control one specific disease of trees by the use of chemicals introduced directly into the sapwood of the tree.

The list of "firsts" will never end at the Bartlett Tree Research Laboratories. Here, scientists are continually searching for new and better ways to protect the shade trees of America. When you consult your local Bartlett representative, you get the benefit of not only his local, native talent, but you also get the benefit of the combined scientific knowledge and long practice of a group including some of the leading authorities in tree health and protection. Small wonder those critical of results are turning to the Bartlett Way—the Scientific Way. Call the nearest Bartlett Office for a study of your tree situation.

The Bartlett Way

BARTLETT TREE EXPERTS

Home Office, Research Laboratory and Experimental Grounds, Stamford, Conn.
Local Offices from Maine to the Carolinas, and West to Indiana.
See your Local Telephone Directory for Local Address.

XUM

FLASHES AND PLUGS

ADD NEW USES. Ralph E. Mooney, historical librarian with American Telephone & Telegraph Co. at 195 Broadway in New York, on Jan. 20 sent TELEPHONY the following possible new use for a magneto telephone, which also happens to be an easier-than-usual way to unearth fish-bait. He said:

"Frank Antico, who is a supervisor in the company that operates our building at 195 Broadway, tells me that he has a friend in Iowa who has a hand-cranked magneto telephone; and when he wants fishing worms, he takes it outdoors and grounds the proper terminals. Turning the crank then brings the worms out of the earth.

"You may have heard of this before, but if not, it seems to be an important development in telephony that should get into 'Flashes and Plugs.'"

• • •

UNHAND THAT BOOTH! A California tree surgeon recently admitted that he had lassoed a pay telephone and was dragging the telephone booth behind his truck when police captured him.

He might have been dragging it yet, officers said, except that the lasso rope broke and left the battered booth in the center of the Coast Highway more than 100 yards from its original roadside foundation.

Police booked him on suspicion of burglary, because, they said, the law defines burglary as "unlawfully entering any structure with three walls." He had entered the telephone booth to fasten the rope to the telephone, in the hope he could break it loose from the wall by tugging it with his truck, officers said.

The defendant's story was to the effect that he picked up two hitchhikers who helped him drain a bottle, then suggested the telephone lassoing as a means of getting money for another drink.

"It seemed like an awfully good idea at the time," the culprit told deputies.

• • •

DOG'S BEST FRIEND. AT&T's *Long Lines* magazine recently carried the following item on care of canines:

"There is nothing much lonelier than a house in which for long stretches of time the telephone is silent. If prolonged for hours on end, it cannot help but produce a sense of unpopularity.

"In Cleveland two dachshunds whose owner was away at work all day apparently felt this sense of isolation keenly. In protest, since there was no other way of expressing their feelings, they howled.

"When neighbors complained, the owner decided that something must be done. Accordingly, from time to time she 'called up' the dogs on the telephone. While there was no answer the sound of the bell was reassuring and the animals, with a sense of not being overlooked, quieted down for the rest of the day."

CIRCULATION

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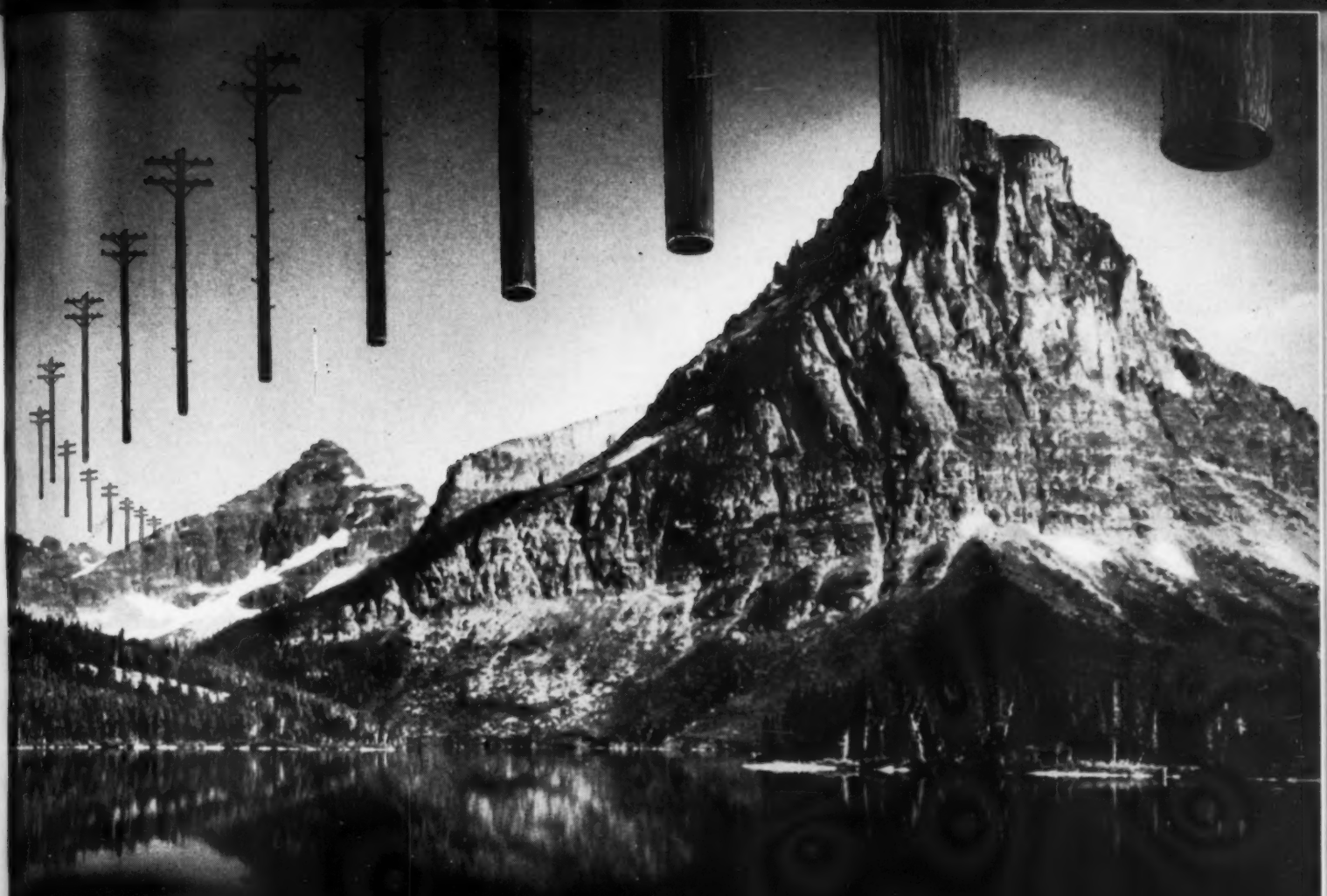


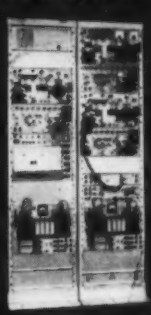
Put your Pole-Line in the Sky... with Telephone Microwave

SAVE MONEY . . . SAVE LABOR . . . SAVE TROUBLE-SHOOTING!

Wouldn't you like to wave your hand and, just by so doing, smooth out mountainous terrain, see your pole-line maintenance costs shrink, take the damage out of stormy weather, and give your subscribers service they want, but you can hardly afford to supply?

This magic is possible with Stromberg-Carlson Telephone Microwave. This is *Radio*—spanning distance with the speed of light, jumping lakes and mountains, impervious to wind and sleet—and providing many simultaneous conversations all on the one circuit.

Utilizing the radio-relay equipment of famed RCA and the voice channeling equipment of Stromberg-Carlson's SETCO division, Telephone Microwave brings the independent operating industry into the push-button age. It will settle many of your most puzzling present problems—it belongs in your future plans. And booklet T-132, yours for the asking, answers all the questions you have in mind. Request a copy today.



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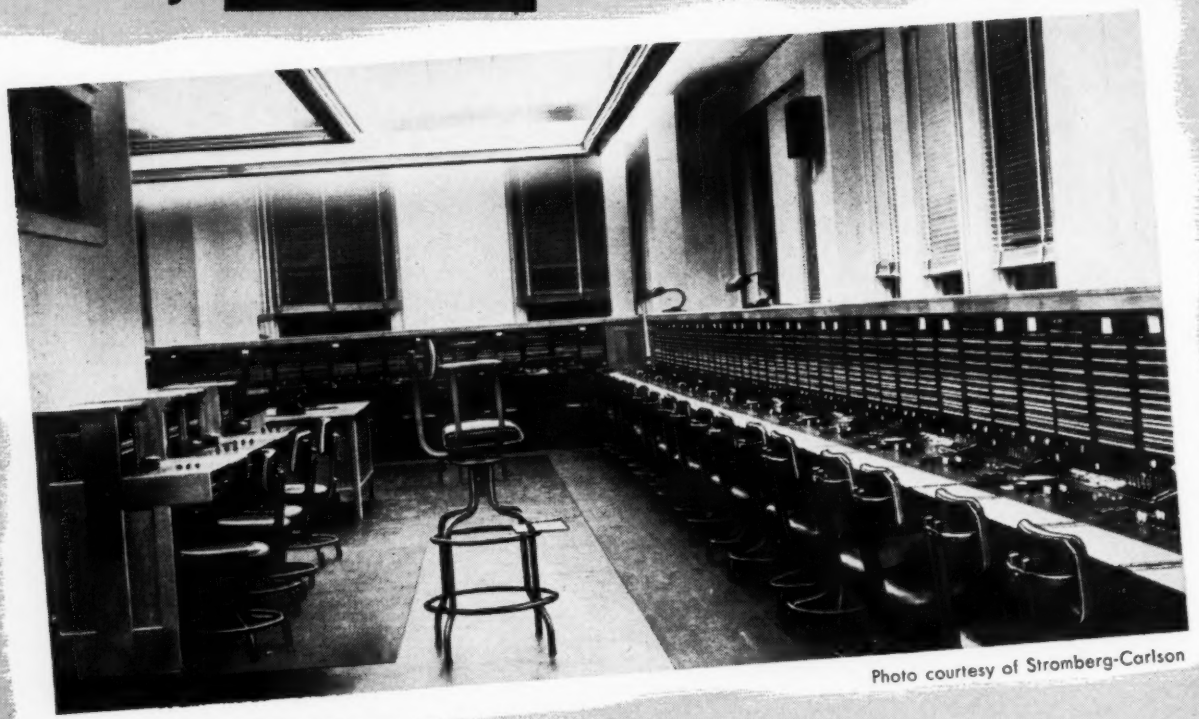

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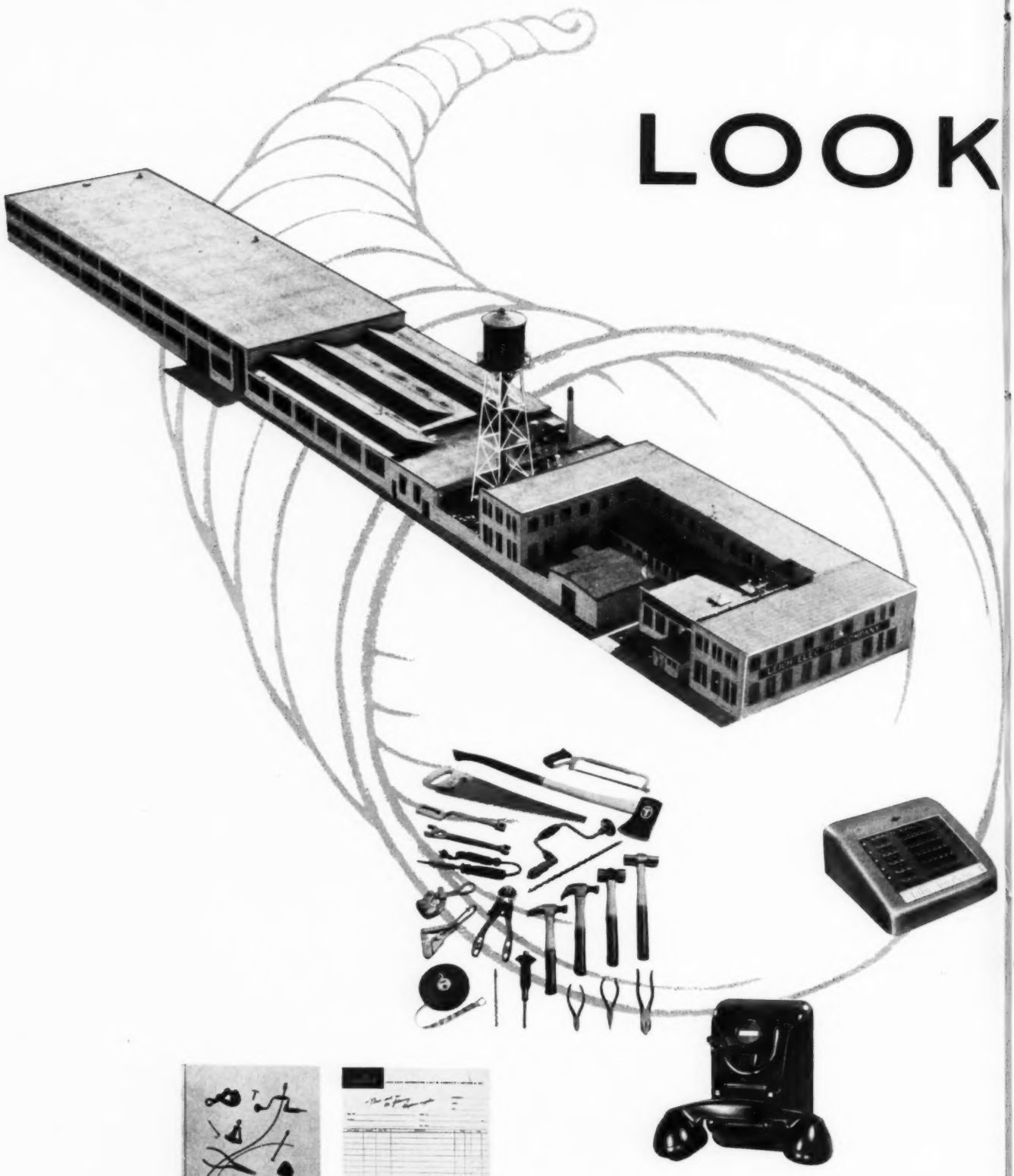

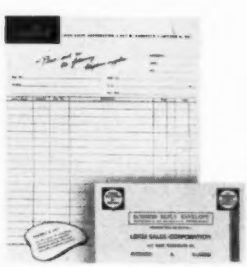

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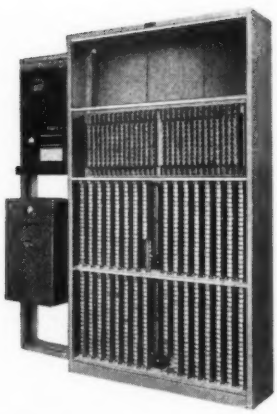
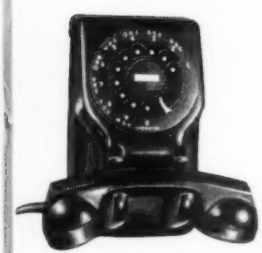
TO LEICH...





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GENERAL SYSTEM

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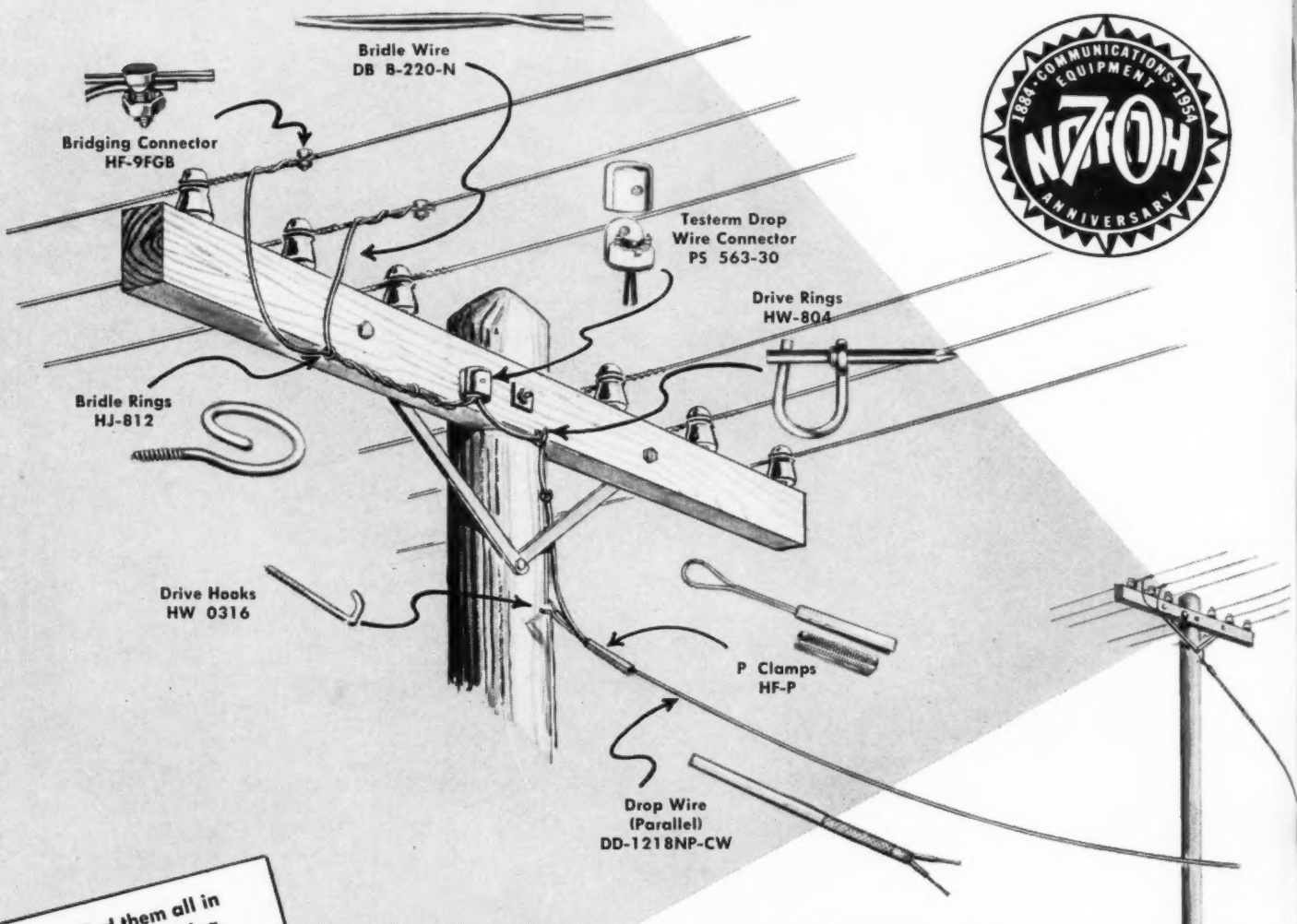

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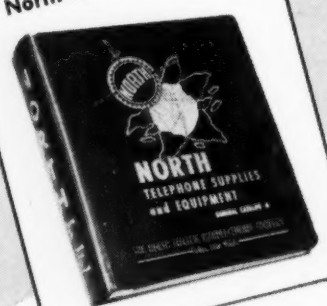

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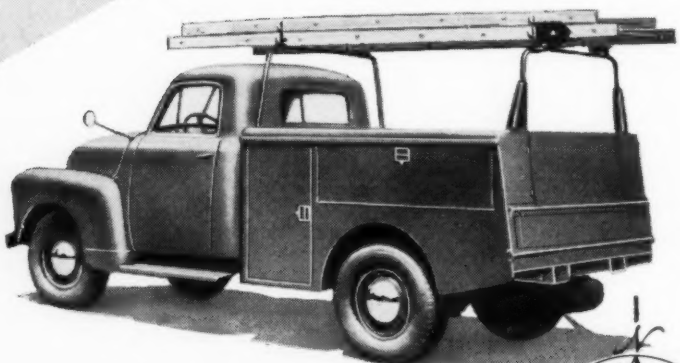

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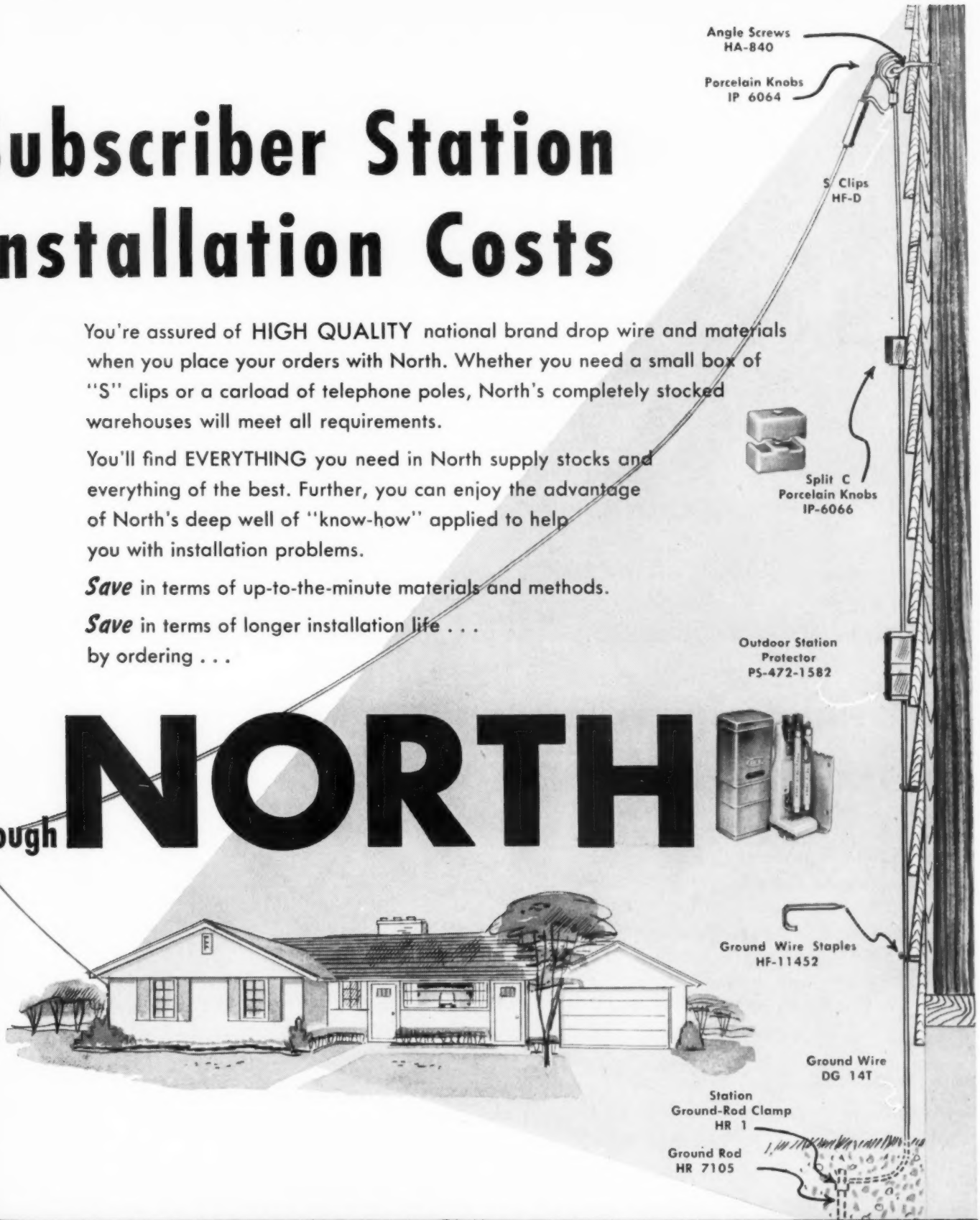

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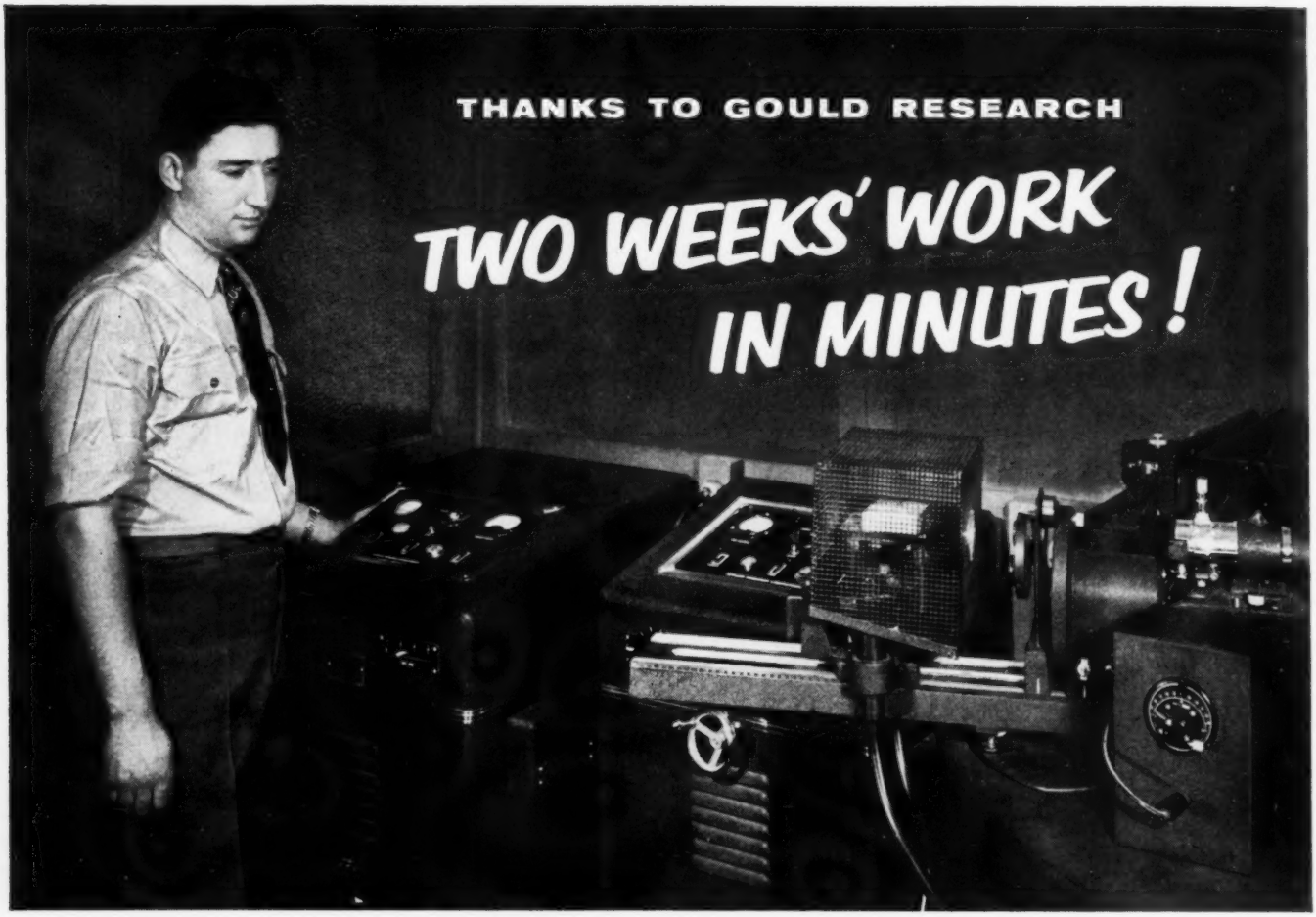

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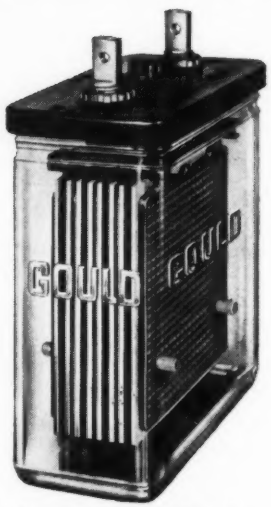

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Why We Should

Build and Maintain Good Plant

By DANIEL SEITZ*

WHY SHOULD we build and maintain a good plant? No doubt you will say "The answer to that is quite simple." Of course, we should build and maintain good plant, making it possible to give good service and in return get good revenue without which no company can long exist.

Speaking of revenue, I have noticed by the trade papers that in a number of instances commissions have granted relief by way of rate increases where certain rates were proved to be too low. Now, this is not only a matter of providing additional revenue and profit, it is also a challenge to those companies benefited by these increases. They, in turn, are expected to build and maintain good plant, thereby giving good service and justifying the increased revenue.

These are perfectly good reasons *why* we should build and maintain good plant but that is not all.

The question as to *how* should we build and maintain that good plant to achieve the required results required by the subscriber and the commission, is all-important.

It has been rightfully suggested that our remarks should be designed to benefit the small plant personnel and we shall attempt to do just that.

Regardless of the size of the plant, there always were and, no doubt, always will be new problems to be solved.

But do you realize how much valuable information on every phase of the telephone industry our trade papers give us for practically free?

It has never been a waste of time to clip all-important information pertinent to plant practice published in the trade papers and file it in a manner so that it can be readily located when it is needed. It is suggested that if you have neglected to do this in the past, by all means start now.

In such files, the small company plant man will find many illustrated suggestions like these:

(1) Be sure to guy the line properly at all corners, with explanation of the reasons and methods of guying.

(2) If it is a one circuit line and not practical to place guys and anchors, key the poles with rocks or logs at the bottom of the pole and near the top of the ground on the inside of the corner to prevent slack line wire and subsequent trouble.

(3) Use only compression type sleeves for all line wire splices, for by their use you can eliminate a lot of service interruption and expense locating a faulty hand splice. Use an inexpensive ohmmeter for locating bad hand connections that have been the cause of noise and poor transmission. The ohmmeter is invaluable for checking test connectors, receivers, coils, fuses, etc.

DANIEL SEITZ

Information regarding the application of this valuable instrument is free; why not ask for it?

(4) Keep drop wire clear of trees. If this is impossible, cover the insulated wire with modern plastic tree guards where it might contact trees.

(5) Also keep drop wire clear of down spouts, lightning rods or any other object which might collect lightning and then discharge it to the telephone line.

(6) Don't draw the drop wire too tight, a 2-foot sag per 100 feet of loop is recommended.

(7) Choose the best lightning protector available, install it properly with a good ground connection and never ground the arrester to an isolated water system together with a power line ground.

(8) Keep the driven ground rod for the telephone protector well away from any ground rod used for power grounding.

(9) Keep the telephone, inside wire, arrester and loop wire clear of all power wiring, appliances, switches, pipes and heating ducts, especially isolated systems. Occasionally these pipes and heating ducts have power grounded to them either accidentally or intentionally and, therefore, would be a source of lightning trouble.

These and many other suggestions worth accepting will be found well worthwhile for building and maintaining a good plant.

Taking a little time while out on the job to do preventive work will pay well

* Mr. Seitz, formerly plant superintendent of York (Pa.) Telephone & Telegraph Co., is serving as consultant with the General Cable Corp.

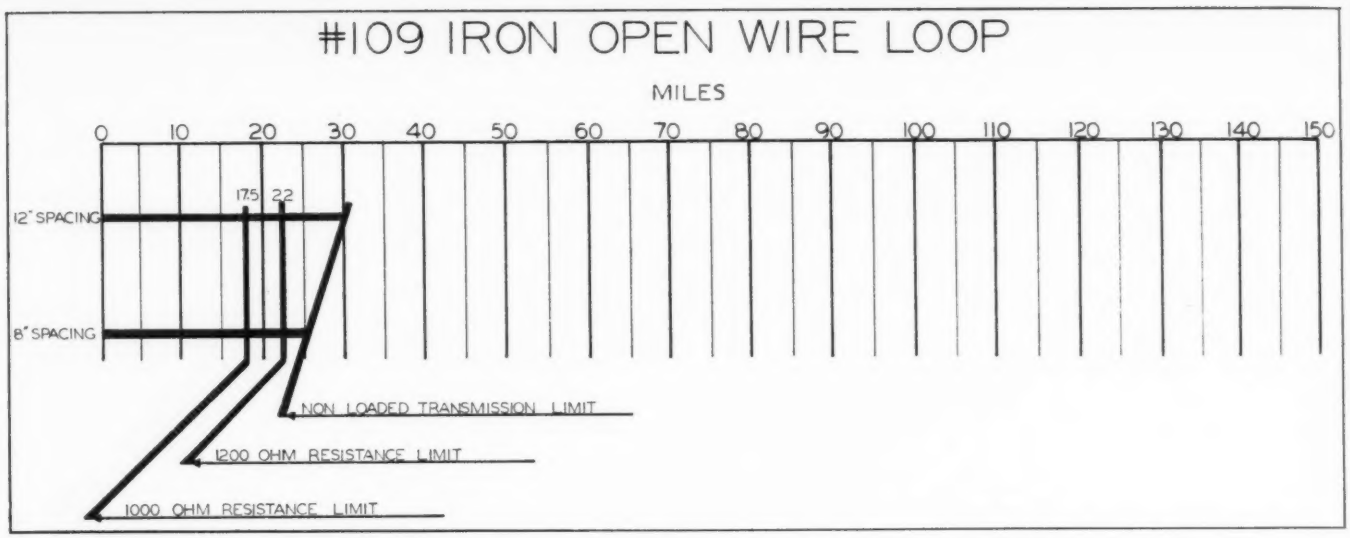
#109 IRON OPEN WIRE LOOP
MILES
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
17.5 22
12" SPACING
8" SPACING
NON LOADED TRANSMISSION LIMIT
1200 OHM RESISTANCE LIMIT
1000 OHM RESISTANCE LIMIT

Chart A. Resistance and transmission characteristics of No. 109 iron wire telephone circuit.

in eliminating subsequent trouble. I can hear you say—"I don't have time to do that." Well, we can become more busy from day to day just clearing actual trouble, seldom eliminating the real cause until finally all we get accomplished is a rush around temporarily clearing trouble.

The switchboard, that most important piece of equipment, should receive special care—install it in a clean dry place and keep it that way.

It is surprising to see how much wear of the plugs and jacks can actually be caused by dust and dirt. Tests have proved that wear caused by dust is an important factor in determining the life of these parts. Do you realize that dust acts as an abrasive?

It is a simple inexpensive job to keep them clean. Why not do it?

I hope that every trouble shooter even on the very smallest magneto open wire plant is equipped with a magneto test set.

The cost of these instruments is insignificant when compared to the expense involved in trying to locate trouble with the ordinary test set which makes it necessary to open the line to test for direction of the trouble.

Of course, the proper time to begin preventive work is during the planning stage even before the poles are erected or a wire strung.

Planning the line so that it will be trouble free, and provide satisfactory transmission, is just as important as it is to have an architect design strong walls and a good roof for a modern central office building.

Resistance and transmission are the governing factors which must be reckoned with when planning a line; either one may determine how long the circuit made up of any particular type of wire and construction may be.

The allowable loop resistance for common battery and automatic systems is usually in the order of 1,000 and 1,200 ohms. Therefore, we have prepared *Chart A* for No. 109 non-loaded open iron wire with 8-inch and 12-inch spacing.

Obviously the loop resistance limits would be the same for 8 or 12-inch spacing which, according to the chart, is 17.5 miles for 1,000 ohms and 22 miles for 1,200 ohms for common battery or automatic lines.

The chart shows that with 12-inch spacing transmission would be satisfactory for 30 miles with No. 109 iron wire for a magneto subscriber or trunk line where loop resistance would not be a factor.

It is interesting to note that if the same wire is spaced at 8 inches it would reduce the transmission limit to 25 miles.

The transmission limits shown are based on an allowable 10 db loss. This value may vary slightly with different networks and we do not intend to imply that transmission over consid-

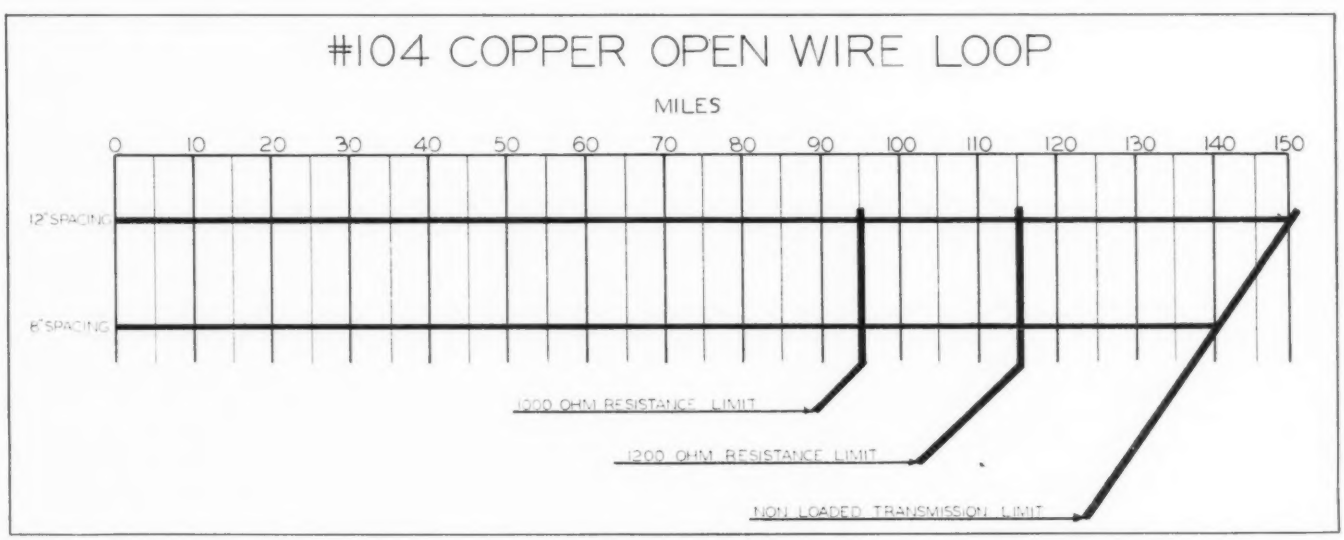
#104 COPPER OPEN WIRE LOOP
MILES
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
12" SPACING
8" SPACING
1200 OHM RESISTANCE LIMIT
1200 OHM RESISTANCE LIMIT
NON LOADED TRANSMISSION LIMIT

Chart B. Resistance and transmission characteristics of commonly used No. 104 or No. 10 B. & S. copper line wire.

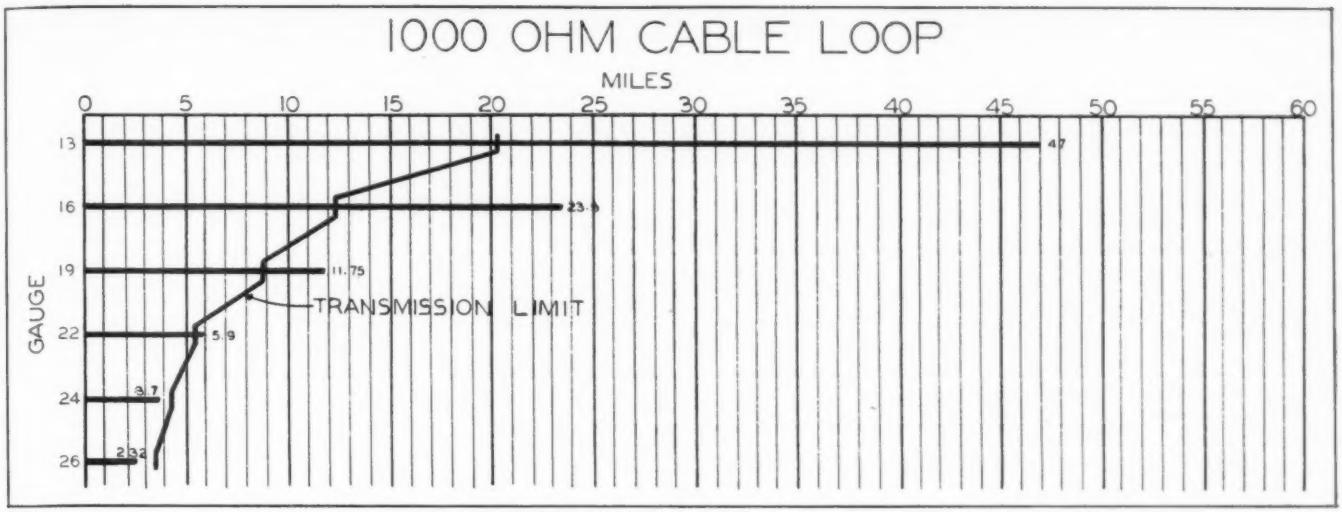

Chart C. The horizontal lines show resistance limit of 1,000-ohm loop limits for various gauge pairs. Transmission limits are also shown.

erably longer circuits of this same type would be entirely unsatisfactory under certain conditions.

A similar table—*Chart B*—for No. 104 non-loaded open copper wire loop with 12-inch spacing indicates that a line 150 miles long would have a transmission loss of 10 db.

Charts of this nature are useful when planning a line to make certain that when it is completed that it will have satisfactory resistance and transmission characteristics.

Circuits of this type are seldom used for common battery or automatic subscriber lines but the chart does show the 1,000 and 1,200 ohm resistance limits.

Use of Cable

When the plant has grown to a point where it becomes desirable from a construction standpoint, as well as economical to employ cable, all the factors involved should be considered before starting the job so as to be certain to use the proper cable at the right place, in the correct manner.

There are no mysteries about cable. All the facts about installation and maintenance are available and, from reasonably easy to understand tables, it is quite possible for the average plant man to determine what the size, gauge, capacity and lead sheath specifications should be to give satisfactory service.

Let us assume, for example, that our cable loop resistance limit is 1,000 ohms and the length of cable required is 4.5 miles.

According to *Chart C*, 22-gauge non-loaded pairs would be satisfactory for both resistance and transmission and, at the same time, provide for a possible ultimate extension of the cable, an additional distance of 1.35 miles.

In this case smaller 24-gauge pairs would not meet requirements while the use of 19-gauge cable would not be necessary to meet the specifications. Neither would it be economical.

The chart includes all the commonly used gauges in telephone subscriber and toll cables.

The chart also clearly indicates that the transmission limit does not increase in distance and in the same proportion as does the resistance limit as the gauge of the cable increases.

Chart D indicates that a 24-gauge pair would meet the 1,200-ohm resistance and 10 db requirements of a cable 4.5 miles in length, but would not allow for any future extensions of the cable.

In some instances, it is more economical to use smaller gauges of cable and install loading which should be carefully considered when long lengths of cable are involved, either subscriber or toll cables.

Chart E shows the non-loaded and loaded lengths of cable that may be used to keep within a 10 db transmission limit.

Cable Loading

Space will not permit going into detail here regarding the merits of cable loading except to point out one or two features.

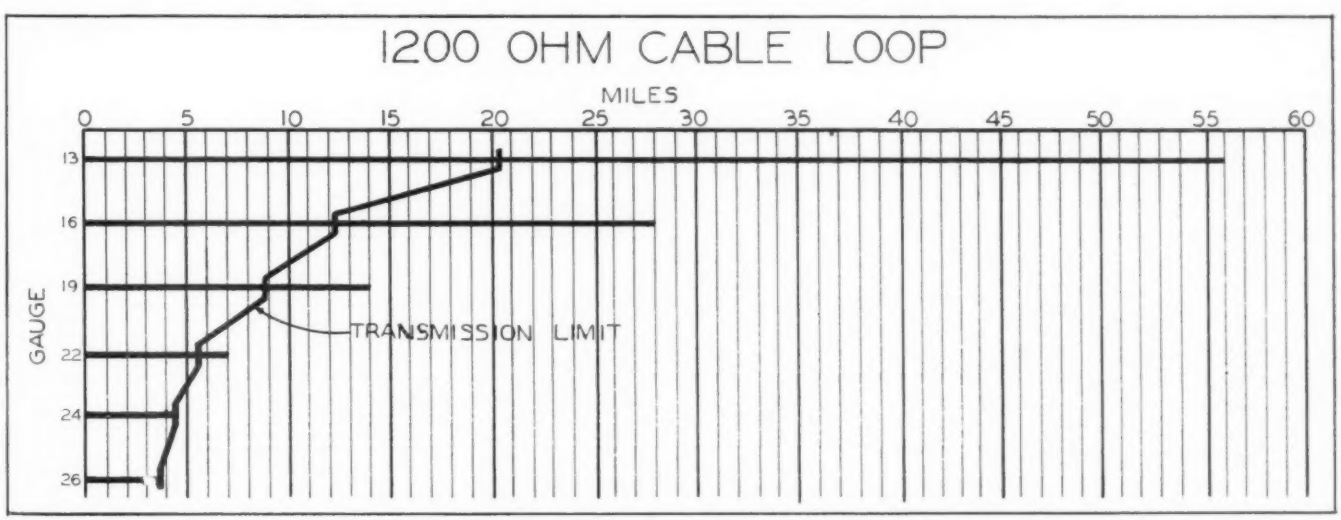

Chart D. The horizontal lines show the 1,200-ohm loop resistance limits. Transmission limits are also shown.

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When planning cable loading it must be remembered that as the loading is increased, so also is the transmission quality adversely affected because of the fact that all load coils have a definite limit as to the frequency they will pass.

The 88 M.H. coils cut off at approximately 3,500 cycles when used with .083 capacity 22-gauge cable. The 120 M.H. coils cut off at approximately 3,000 cycles when the same type 22-gauge cable is used.

Actual preventive maintenance should start just as soon as the cable is installed and continued until the cable is junked. Cable life may be materially increased if preventive measures are faithfully observed.

Preventive maintenance is far too involved to be discussed adequately here. However, the importance of modern reliable lightning and power protection should be stressed. It can be summed up as follows:

For the want of a good protector the cable pair was lost. For the want of a cable pair the circuit was lost. For the want of the circuit, revenue was lost. For the want of revenue the company was lost.

Dial Conversion

I am sure that many of you have converted to automatic service, are in the process of installation, or are looking forward to this as the next step of improvement to your system.

The whole of this discussion could easily be devoted to conversion to automatic, but space does not permit, so we will only mention one or two features.

Converting from magneto to automatic presents the most problems, but these should not be too difficult if simple precautions are observed during the installation and before the actual cut-over.

Perhaps insulation failures after a cut-over are the cause for most of the trouble, but there are numerous instruments and ways to locate and eliminate these faults before they have had an opportunity to cause service interruption.

Testing Equipment

All automatic offices, no matter how small, should have a test board equipped with a 1,000-ohm per volt meter with a 100-volt scale. There should also be a 1,010-ohm shunt together with the necessary keys and 48-volt central office battery.

Any case of insulation failure that will affect an automatic line can be detected by the use of this meter.

It is suggested that after the dial station equipment is installed and condensers are connected in the magneto sets, in dry weather, the 100,000-ohm meter be used for running down faults and clearing them. During wet weather, throw the shunt key which will reduce the meter resistance to 1,000 ohms.

This action will also reduce the sensitivity of the meter. However, any trouble that will affect the automatic lines in wet weather can be detected by the use of the low scale and cleared in the usual manner.

No special skill is required to make the required tests. A little practice will indicate how and when to use each scale of the meter. For example:

We have an open wire line several miles long and, in wet weather, it tests what appears to be nearly a solid short and ground on the 100,000-ohm scale, which in this case is caused by wet insulators, etc.

If, in switching to the 1,000-ohm scale the reading is much lower, perhaps in the order of 0 to 5 points, you may be certain that the fault resistance is so widely distributed along the line that it will not affect automatic operation.

On the other hand if the low scale meter should indicate 5 to 15 points trouble it would possibly trip the ring and it should be cleared.

Any meter reading on the low scale above 15 points would indicate possible complete automatic line failure because of defective drop wire station wiring, generator shunts, etc. This trouble must be cleared before the automatic cut-over to prevent subsequent service interruption.

Portable Testing Equipment

If the budget will not allow the purchase of a simple test board for the central office, including the two-range meter described, we would suggest a portable instrument having the above mentioned characteristics, together with a 45-volt radio battery. This set may be used both in the central office and in the field.

The telephone plant man having the know-how, yet lacking the essential modern testing equipment, is like

"A doctor without a stethoscope."
"A carpenter without a square!"
"A mason without a plumb."

How, then, if this be true (and I am sure that it is) can any plant owner expect the trouble man to shoot trouble without modern testing equipment?

If we provide good tools, testing equipment and technical information the average plant man will soon learn "HOW TO BUILD AND MAINTAIN GOOD PLANT."

CHARACTERISTICS OF IRON LINE WIRE

GAUGE	KIND	OHMS PER PAIR MILES	10 DB TRANS LIMIT
#109	E.B.B.	57	17.5
#109	B.B.	66.6	15.0
#109	STEEL	78.72	12.6

NOTE - #135 H.S. STEEL 5% LESS RESISTANCE THAN #109 B.B. IRON

CABLE RESISTANCE

GAUGE	1000 OHM LOOP MILES	1200 OHM LOOP MILES
13	47	56
16	23.5	28
19	11.7	14
22	5.85	7
24	3.7	4.4
26	2.3	2.78

CABLE TRANSMISSION BASED ON 10 D B LOSS

GAUGE	MILES N.L.	MILES H88	MILES H120
13	20.5	111	120
16	12.5	55	60
19	9.0	28	32
22	5.5	12.5	14.5
24	4.25	7.5	9.0
26	3.5	5.25	6.5

CHART E

by FRANCIS X. WELCH WASHINGTON EDITOR

Michigan court recognizes deteriorating effect on utilities' earnings caused by "regulatory lag" in rate cases in decision on General Telephone Co. rate increase application. Attorney General Brownell again asks Congress to legalize use of evidence obtained by wire-tapping in national security cases.

THE MICHIGAN SUPREME COURT has handed down a very interesting and constructive decision on the question of regulatory lag. This term is generally used in connection with the delay, and resulting loss, which is experienced by a utility company between the time it asks for a rate increase and the time it actually gets one. By extension, it can also apply to the "erosion" or diminishing rate of earnings (below a level of reasonableness fixed by the regulatory authority) which is experienced by a utility company in an inflationary period of rising operating expenses, even after a prescribed rate increase has gone into effect.

For example, if a telephone company gets a rate increase on Jan. 1, which is supposed to yield a 6 per cent return, and its net income keeps falling because of rising costs so that it is only making 5.5 per cent within six months, it is obvious that the company is actually losing ground, no matter what the regulatory opinion may indicate to the contrary.

The decision of the Michigan Supreme Court involved the General Telephone Co. of Michigan, and stressed the importance of prompt and up-to-date rate case proceedings to offset the deteriorating impact of regulatory lag on utility earnings (TELEPHONY, Jan. 15, p. 27).

The Michigan commission had allowed a $660,000 rate increase as compared with a company request of 1.1 million dollars. A lower court turned the case back to the commission with instructions to grant additional rate relief on the basis of testimony showing increased expenses (total $401,535) for 1952. As a result of regulatory lag, the estimated return had dropped from 6 per cent to 4.2 per cent. The commission refused to go along, pointing out that the company should start a new rate case so as to get in new evidence.

The Michigan Supreme Court observed that a commission cannot establish a retroactive rate to correct an injustice caused by a delay of rate relief in the past. It added:

". . . When failure to provide adequate rates in the past cannot be remedied by retroactive orders, it follows that every reasonable effort should be made by the commission to eliminate unnecessary delay and to pass judgment on facts that will not only reflect upon the present but a reasonable period in the future. The commission failed to meet this test not only at its hearing but failed again when the testimony received before the court was transmitted to it, and it was in error in informing the court that the company's 'remedy in this regard is simple and expedient; namely, the presentation of a new rate application to this commission for the proper determination of such facts affecting its revenues, expenses, and services as have occurred since the close of the record upon which our order was based.' The commission was in error in refusing to consider the testimony transmitted by the court, and the trial court properly held that commission's order of Dec. 5, 1952, failed to meet statutory and constitutional requirements."

This is an important point—one which telephone companies in other states would do well to keep in mind; in case the same argument is made about their need for rate relief. Such relief should not only take care of the situation up to the latest date on which evidence of income, expenses, etc. can be registered but also reflect some consideration of probable experience in the future. After all, utility rates must always be fixed for the future—never for the past. And a public utility commission which ostensibly fixes future rates on the basis of restricted information, which is not only past, but patently out of date, is not being realistic. And it is no answer to say to the company "start another case and we will get around to that later on."

In the case of the General Telephone Co. of Michigan, the company was able to collect the amount of rate increase actually requested by order of the lower court under a bond of a million dollars. The state supreme court found no fault with this procedure, which seems to be a very good way of insuring a utility company against losses due to regulatory lag which would certainly have been incurred in this case if the lower court had not permitted the requested rate to go into effect. Of course, if the commission found (and the courts finally approved) that the requested rate was too high, the difference could always be refunded. But where the situation is the other way around, and the company has experienced an actual loss through inadequate rate relief, or delay of rate relief, the past loss can never be recovered.

The Michigan Supreme Court said on this:

"We believe that the (lower) circuit court properly exercised its general equity jurisdiction to protect the company from confiscatory rates during the interval that the court realized must elapse between the time the commission refused to give consideration to the testimony regarding the impact of its order upon the company during 1952 and the time when said commission would give that consideration."

One other important point decided in this Michigan case adds to a growing bond of precedent of importance to telephone companies. That deals with the question of whether service complaints or correction of service inadequacies should be mixed up in rate cases to the point of denying otherwise justified relief until the service difficulties have been corrected.

Court decisions in Ohio and else-

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where have already decided against conditioning a rate increase on satisfying service complaints. And now the Michigan Supreme Court (after citing the Ohio decision) has joined in the same line of reasoning.

Speaking of important rate cases, the recent action of the Illinois commission is another instance where regulatory authority has been used to foreclose the telephone company from rate relief. It is interesting to note, however, that the principle of a "fair value" rate base—something substantially between original cost and reproduction cost—was again followed by the Illinois commission.

Rehearing has already been asked on the Illinois commission's dismissal of the Illinois Bell Telephone Co.'s proposed rate increase. The company asked for an increase of 24.9 million dollars, but was given none whatever. The commission found that present rates are yielding a return of 5.5 per cent on present fair value and held that this is enough. The commission fixed the fair value of the company's intrastate properties as of Aug. 1, 1954, at 627 million dollars, including telephone plant under construction, property held for future use, materials and supplies, but no separate allowance for working capital. The rate base used by the commission compares with a finding of original cost depreciation of $545,698,-161 and reproduction cost less depreciation of 709 million dollars.

Illinois Bell's petition for rehearing cited 47 alleged errors of the commission. The more important defects, upon which the company may be expected to take an appeal to the state courts, are these: (1) The commission refused to consider evidence as to the cost of inflation to the company; (2) it failed to consider increased wage costs; (3) it failed to make full allowance of federal income taxes as expenses; (4) it fixed a lower rate of return for Illinois Bell than for other utilities whose business involves a smaller risk; (5) it used evidence based on theories of so-called expert witnesses which were clearly shown to be grounded on factual errors; and the commission also failed to throw out of the record obviously improper and incompetent testimony.

Legality of Wire-Tapping

U. S. Attorney General Brownell is once more asking Congress to legalize the use of evidence obtained by tapping telephone wires in espionage and other cases affecting the national security. The bill, which languished in the last Congress, faces an uncertain future in the present Congress. The law makers just naturally hesitate to brook criticism which any attempt to legalize or condone wire-tapping invariably generates in many quarters.

There is even evidence that this agitation is spreading to the state level. Out in Oregon the state attorney general, Robert Y. Thornton, was asked by a state senator for an opinion on whether wire-tapped evidence could be used in state court criminal proceedings. This is now the practice in New York State.

The Oregon Attorney General consulted the statutes and found that it is legal under existing Oregon laws for police to tap the telephones of criminal suspects and gather evidence for their prosecution. As a result, a good deal of indignation has been directed at the attorney general by Oregonians who feel strongly on the matter. When an attorney general renders an opinion, he is not defending or apologizing for the statutes, but merely declaring how he finds them to be.

Oregon had been a state only three years when its legislature moved to protect the privacy of the citizenry by forbidding the unauthorized interception of telegraphic messages. This statute, still on the books, fails to mention the telephone, for that instrument had not yet been invented in 1862.

The Federal Communications Act of 1934 bans wire-tapping, but courts have held this is no restriction on the activities of state law enforcement officers in the absence of state laws to the contrary. There is an Oregon law against interfering with telephone service, but wire-tapping with modern induction coil methods requires no physical connection with telephone wires, and thus does not so interfere. And as for the admissibility of such evidence, courts have held that wire-tapping does not represent illegal search and seizure.

Even up in New York State where wire-tapped evidence has long been used, State Supreme Court Justice Hofstadter recently declined to authorize three wire-taps which the New York City police department wanted to use to make cases against suspected bookmakers. Under the New York practice, the police apply to the court for permission in such cases and it is generally granted.

But here was a situation where the judge refused. It was not generally known just what were the facts in these cases to cause the judge to deny the police request. But he said some interesting things about wire-tapping, in general, which may be of interest to people in the telephone business.

He admitted that New York City is "rife with violence," but he said he believes the way to combat crime in that metropolis is by building up the police force rather than increasing the use of such easy, but odious, devices as wire-taps.

Judge Hofstadter pointed out that "a tapped wire is far more devastating" than a search warrant because the latter is used openly and is limited to a specific time and place. A wire-tap is conducted in secret and may possibly continue for a prolonged period. He adopted the principle of rejecting the police's request for wire-tap "except under the most urgent circumstances."

He thought that the New York City requests before him did not indicate that the potential results would be sufficient to warrant the invasion of the privacy involved. The New York City police will probably not make any test of the judge's ruling, because there are other judges and the New York Supreme Court (despite the implication of the name) is the lowest state court of original jurisdiction. Nor is it likely that the New York police are going to give up their practice of using wire-taps in criminal cases.

But out of such discussions and agitations there may yet emerge guiding principles which will enable the federal government as well as the states to get together on some uniformity of practice in determining when wire-tapping is permissible and when it is not. Incidentally, in the new wire-tap bill proposed by Attorney General Brownell, telephone and telegraph common carriers would be given a legal basis for refusing gambling facilities.

The proposed legislation would outlaw interstate relay by telephone or wire of gambling information on horse and dog racing. At present, the common carriers are obliged to serve all comers. The move is aimed primarily at the private wire service of the book-making racket "without which the racket cannot exist on a national scale," Brownell said. He added that although he is aware gamblers bet on sporting events other than dog and horse races, he believes the proposed legislation "will deal effectively with the wire service problem and that a broader statute is not necessary."

News reporting of information which might be defined as gambling information under the proposed law would be exempted from its provisions "if such information is intended, transmitted, supplied, delivered, and received only for printed news publication in newspapers, magazines, jour-

(Please turn to page 51)

The OPERATOR'S CORNER

by MAYME WORKMAN, Traffic Editor

WE WHO ARE engaged in the telephone industry know that our operators at the switchboard play an important role in trade, commerce, and the social and business life of the communities in which they work, and that they find many occasions to be helpful to their customers —yes, in some instances, they even help Santa Claus in his work of taking orders from youngsters for their wants at Christmas time.

The Dec. 25 issue of TELEPHONY in "Flashes and Plugs," the humour section of the trade journal, read so avidly by many of its readers, told about "The Voice of Santa Claus" and, while Christmas 1954 is now history, may I not revive it for just a little while to elaborate on Joseph F. Schambier's role of Santa Claus and relate how four operators at the switchboard and their supervisor at White River Junction, Vt., served the "Santa U.S.A." program.

According to Santa Claus (Mr. Schambier, a 37-year-old Veterans Administration clerk, who for the last six years, has been taking telephone calls for the "Merry Old Gentleman"), much credit for the success of his role is due to the work and interest of the switchboard operators, particularly to the ingenuity of one Ruby Fitzgerald, supervisor, who poured her heart into the work to help make the kiddies of this great country of ours, as well as Canada, very happy. Santa says he must not omit Manager Bradbury. He, too, had his headaches, but came through with flying colors.

In case you failed to read the article in "Flashes and Plugs," Mr. Schambier fell into his role of Santa Claus six years ago as a volunteer answering a local request of the Veterans of Foreign Wars post. His fame as St. Nick grew until now he stands ready to talk to any youngster in any part of the country who picks up a receiver and says, "I want to talk to Santa Claus at West Lebanon, N. H." . . . provided, of course, his parents are willing to pay the toll charge.

On Dec. 13, 1954, the Associated Press interviewed "St. Nick," and newspapers and radio stations throughout the nation received the inside information on how to contact the "North Pole."

The AP story was barely in circulation when Schambier's telephone started jingling like bells on Santa's reindeers. According to Santa, calls came from every part of the country. "Every child seemed to think that here was a golden opportunity to get top priority on Santa's distribution route."

The telephone company installed a special switchboard in Santa's home and, the first night the volume of traffic was so heavy, the operators were almost numb. Each tiny voice, of course, said, "I wanna talk to Santa Claus." The telephone company tabulated over 1,000 calls on Dec. 13. And that was just the beginning! The next night over 2,000 calls jammed the New Hampshire telephone lines to "Santa's Workshop."

How thrilling it must have been for the operators who were privileged to assist Santa in making it possible for so many children to talk to him personally! Speaking as a former operator, we are always glad to have a part in spreading happiness and cheer to others, particularly to little children, for we remember the divine statement, "Suffer little children to come unto Me, for theirs is the Kingdom of Heaven."

Youngsters calling Santa Claus (Schambier), receive the full "Santa Workshop" treatment. Santa's cheery voice greets them; a music box plays, reindeer bells tinkle, and a 100-year-old bell peals.

While Santa is spreading his cheer to the little tots and listening to their requests, he too, has a little fun on the side—as when a lad promised him "a sandwich and a bottle of beer" if he

(Please turn to page 47)

Two Wilder, Vermont, youngsters decide to contact Santa, direct, about that doll buggy.

XUM

Maintenance Testing Equipment

By JOHN A. BRACKEN

IN BOTH manual and dial telephone systems when the equipment becomes inoperative, or does not function properly, it is usually because of the failure of one of the circuits or parts. Whereupon, it becomes necessary to determine the nature and location of the fault in the most direct and rapid method possible in order that repairs or replacements as required may be made to restore the equipment to its proper operating condition.

In this respect, an ohmmeter is a very useful tool which, when intelligently applied, will aid in quickly localizing the trouble. Although the ohm-

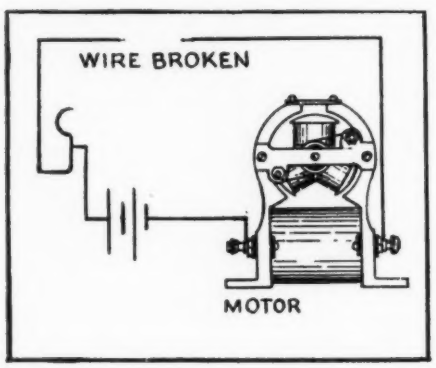


Fig. 1

meter readings do not in themselves indicate the exact trouble, it is possible from the ohmmeter readings obtained —plus knowledge of the operating principles of the particular equipment involved and its associated circuit—to deduce the actual location of the fault. Therefore, the greater the understanding regarding the general and coordinated functions of the various parts and circuits of telephone equipment, the more readily it should be understood which parts and circuits are dependent on others, and what their interactions are. All of this should greatly aid in testing for trouble and localizing it by means of an ohmmeter.

As a preliminary to the application of an ohmmeter in localizing telephone

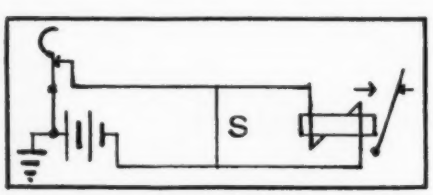


Fig. 2

PART 74. The preceding article in this series appeared in the October 9, 1954 issue on page 41.

equipment faults, perhaps it would be advisable to first review the fundamentals of the faults affecting the proper operation of the equipment, which may be classified as follows:

(1) Chemical: principally due to

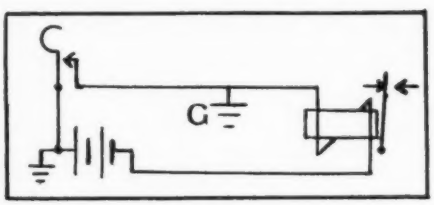


Fig. 3

moisture, corrosion, electrolytic action, oxidation, etc.

(2) Magnetic: usually caused by weak magnets, residual magnetism, demagnetized magnets, polarization (such as a relay or ringer armature becoming permanently magnetized), induced magnetism failure, poor magnetic circuit, etc. A magnetic circuit is the path followed by magnetic lines of force. Although in practice the greater part of a magnetic circuit is through the magnetic material, part of the circuit is frequently completed through air gaps.

(3) Mechanical: usually due to moveable parts being improperly adjusted, or out of adjustment; loose, sticking, or broken parts, etc.

(4) Electrical: the electrical circuit faults can be designated as:

(a) Open. An open is a point where any part of a circuit is opened, or an incomplete path whose conducting continuity is broken and thus does not offer a passage for the electric current, as shown in *Fig. 1*, at the point "Wire Broken." A battery is said to be on open circuit when giving its normal voltage, but no current to the circuit which it normally supplies.

(b) Short circuit. This is a condition which, as the name implies, means that two conductors are in metallic contact when they should not be, and which thus shortens the path over which the current is supposed to flow. This does not necessarily mean that the length of the conductors over which the current would flow has become shorter, but that the resistance interposed in the path of the current has been reduced, and the circuit is said to be shorted. Again, a short circuit may be defined as an accidental low resistance connection between two sides of a circuit. With this condition the current from the source is thereby allowed to return to the source without flowing, as intended, through the equipment (as shown in *Fig. 2*, at point "S").

(c) Grounds. There are two kinds of grounds. First, one which is intended, as for instance, the use of the earth for part of a circuit. Early in the history of telephony, the advantages of employing the earth as an electrical conductor were recognized, and put to practical use.

Second, a ground which is not intended. For example, when a conductor which should be properly insulated, but is not, comes in contact with the earth, as shown at point "G" in *Fig. 3*. Or if a telephone station drop wire rubs against a tree branch until the insulation on the wire is worn through and the bare wire makes contact with the tree and through it to the earth, the drop is said to be grounded.

(d) Cross. In speaking of a cross, a direct metallic contact, accidentally established between the conductors of

Fig. 4

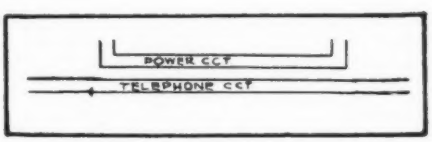
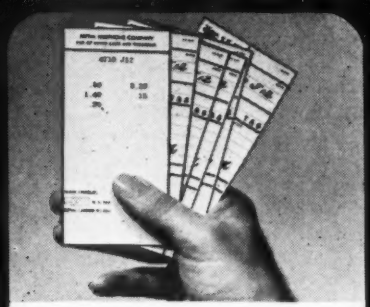


Fig. 5

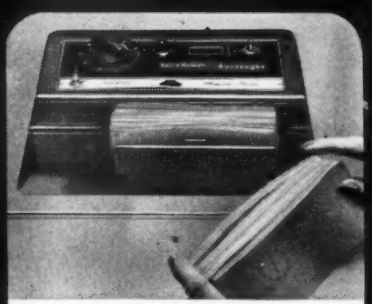
two telephone lines or other circuits by crossing each other, is referred to, as shown at point "C" in *Fig. 4*, where "C.O." represents the central office and "T" a telephone. However, a distinction is drawn between the cross in *Fig. 4*, and an inductive cross, where a direct metallic contact between parts of the respective circuits is not made.

By an inductive cross is meant the interference between neighboring telephone circuits, or a power circuit and

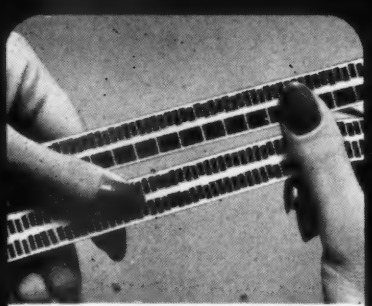
(Please turn to page 30)



What the customer gets—a non-descriptive "facer" listing his toll calls, plus all the original toll tickets.



Here's what you do. Record on film, with the Micro-Twin, the same facer and the toll tickets, front and back.



The record you keep. Easily stored, easily referred to microfilm that saves 99 per cent of present storage space.

How you refer to it. Slip the film into the reader and turn to the tickets you want. It's quick, clear, and simple.

Here's a new, simple, low-cost way to better toll billing *with the*

MICRO-TWIN

microfilm RECORDER-READER

Bell & Howell / Burroughs

Here it is . . . a new and simplified method of toll call billing that greatly reduces customer questions about toll charges. It's simple because the burden of filing, searching for, and explaining toll tickets is eliminated. And here's how it's done:

With the Micro-Twin, you just microfilm customer toll slips—front and back simultaneously, if you wish—along with a simple, non-descriptive "facer," and send the originals with their complete call information to the customer. That gives him a clear description of every call he's made.

And you will have the same record you had before, but it will take only *one per cent* of the space it formerly occupied, because it will be on film! This is the lowest-cost way yet developed to eliminate customer questions that waste time, and toll slip filing that wastes space and money. And there will be extra savings for you through reduced posting time.

There are these important bonuses, too, in the MICRO-TWIN!

When it isn't being used for toll call billing, there are enough other jobs to keep the Micro-Twin busy making important savings on such jobs as permanently recording personnel data, service applications, easement agreements, and any other records you want to keep. Like the toll slips, they can then be filed in one per cent of the space they now take.

You'll really need more complete information about the unique Micro-Twin and how it can help you to improve customer relations, provide positive records, and cut filing time and space to almost nothing. Get in touch with our near-by branch office, or write to Burroughs Corporation, Detroit 32, Michigan.

Wherever There's Business There's **Burroughs**

Burroughs and Micro-Twin are trade-marks.

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wasting time,

NOW WE CAN HELP YOU:

1: REDUCE cable splicing costs even more.
2: Make the splicers work EASIER.
3: Eliminate many troubles and delays caused by wrapping cable ends.
4: Still further SPEED UP new cable splicing operations.

These objectives are accomplished by the use of the following recently improved and some COMPLETELY NEW devices.

Figure 1

The still further improved Model C Meter Unit, Model CMU. Three Test sets in one—The MURPHY ONE MAN CABLE PAIR IDENTIFIER, The Buzzer Continuity Tester—and the Ohmmeter for locating trouble. A new larger case to accommodate the larger, heavy duty, longer life battery. Special bracket and clamp to hold the battery in place. The battery is now clamped between neoprene pads so it can't shift, can't short out, and leakage can't damage the case. Spring steel SPEED NUTS are used to attach the rear panel to the case so the threads can't strip. The buzzer is insulated from the case. Lettering is stamped into the case so it can't wear off.

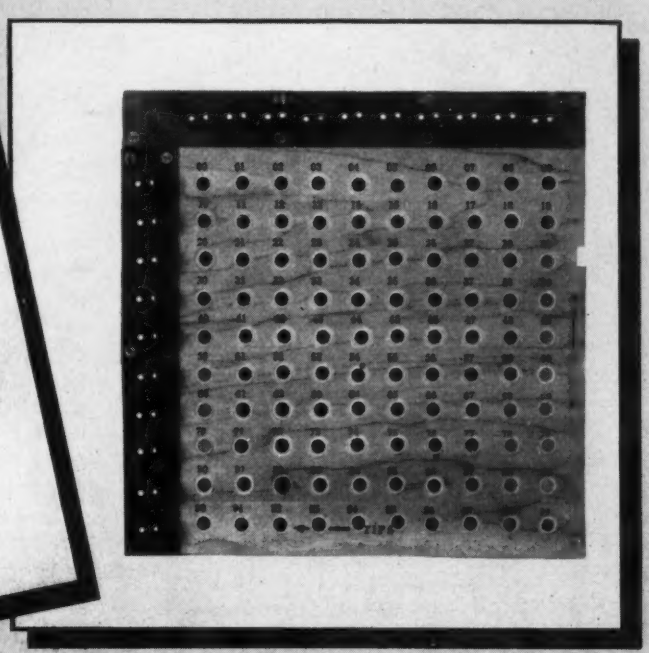

Figure 2

The completely new—COMBINATION TAG AND TERMINATING BOARD, Model TTB. This is the new board that automatically sorts and groups the wires just the way you need them for connecting to the binding posts of the Terminal Board—only, in this case, the Terminal Board is built right onto the Tag Board.

MURPHY ENGINEERING LABORATORIES, INC.

4419 TULSA HOUSTON 24, TEXAS

e manpower & money

Figure 3

Figure 5

The VARNISHED HARDWOOD CARRYING CASE, Model WC, for the combination Tag and Terminating Board. Sturdily constructed to adequately protect the Terminating board against damage during storage or transportation. Neoprene pads to cushion the board and eliminate damage from abrasion even while in the box.

The DUAL PURPOSE CLAMP, Model DP. This is the clamp that will hold the Terminating Board at any angle, above or below the strand—for greater convenience and speed in boarding a cable. The clamp can also be used to hold the present standard tag board in position while using the earlier type of Terminal Board.

This same DUAL PURPOSE CLAMP is also used to hold the METER UNIT above the strand, right over the splice, at any convenient angle, for the greatest visibility of the meter face.

All bolts used in the clamp are bradded so the wing nuts can't get lost.

THE NEOPRENE BAG, Model NP. You simply slip it over the Terminating Board and tape it down around the cable armor, to seal out the weather. The Bag is made of U.S. Navy Specification High Tear Nylon Fabric covered on both sides with a heavy coating of neoprene. This almost indestructable bag can be used over and over again, hundreds of times. This is the end of tightly wrapping the terminal board and causing trouble by the pressures necessary to get a good seal.

Now, for the first time, ONE MAN can test to identify cable pairs and do it three times as fast as two men could formerly do the same job. "ONE-MAN" splicing crews are now a reality. On new cable work, labor costs are reduced by from 30% to 50%, depending on just how far you are prepared to go in utilizing the One-Man crew.

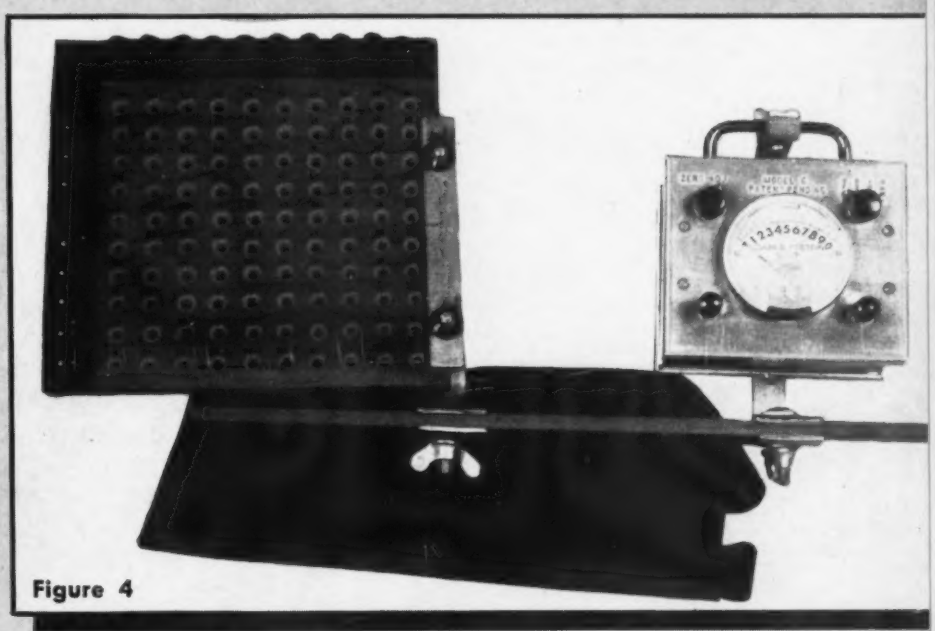

Figure 4

Price List of Murphy Cable Tester Units

Model	Description	Price each FOB
CMU	Model C, Meter Unit Only, Aluminum Case for Large Battery	$62.70
LC	Leather Carrying Case for Meter Unit, Foam Rubber Lined	12.00
TB	Terminal Board, Complete, Earlier Type, 2¼x10½ inches	36.00
TTB	Combination Tag and Terminating Board, 8⅜x8⅜ inches	43.00
WC	Wood Carrying Case for TTB above, none sold without case	6.00
DP	Dual Purpose Clamp, for attaching TTB and CMU to Strand	4.00
NP	Neoprene Bag for covering TTB and Cable end against weather. Can be used over and over	4.00

Write for quantity Prices in lots of 10 or more. Get the benefit of quantity prices by sending in a blanket order now, and send individual shipping instructions later.

Write Now RIGHT NOW

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telephone line, as shown in *Fig. 5*, where a power circuit parallels a telephone circuit for a short distance.

Due to electromagnetic induction between the two circuits, an electric current is inducted in the telephone circuit from the adjacent power circuit. Though this induced current be small, it may be sufficient to cause a disturbance in the telephone circuit which will affect its proper operation.

However, the telephone circuit should have its conductors properly transposed in regard to the power circuit in equal lengths of consecutive sections of the telephone line wires so that each conductor alternately occupies the opposite side of the circuit as in *Fig. 6*.

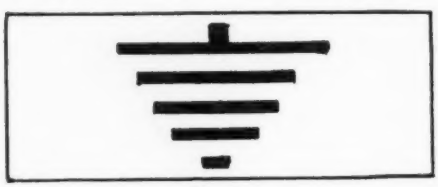

Fig. 7

With this arrangement, the intensity of the induced current in each conductor is the same and in opposite directions; consequently, the two currents neutralize each other and the inductive disturbance in the telephone circuit will be reduced.

In order to completely eliminate the inductive effect between the power and telephone circuit, it is sometimes necessary to transpose both circuits.

An electrical circuit is defined as a course followed by an electric current along a medium composed of a succession of conductors through which the electric current flows in passing from its source, around the conducting path and back to its starting point. Under certain conditions the conducting path may be composed wholly of wire, or partly of wire and the earth. A general designation applied to the earth when employed as an electrical conductor is "ground," represented by the symbol shown in *Fig. 7*.

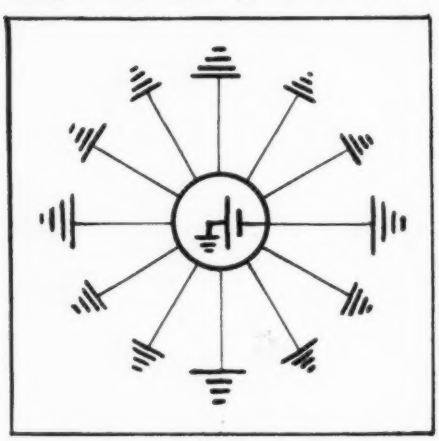

Fig. 8

According to physical science, the earth is always more or less electrified, and its capacity for becoming electrified is infinite. Because of its electrification, the earth is said to be at a certain potential. When the potential of one pole of a source of EMF is higher, and the potential of the other pole lower than the earth's potential, connecting these extremes with the earth establishes a difference of potential between them and a flow of current naturally follows.

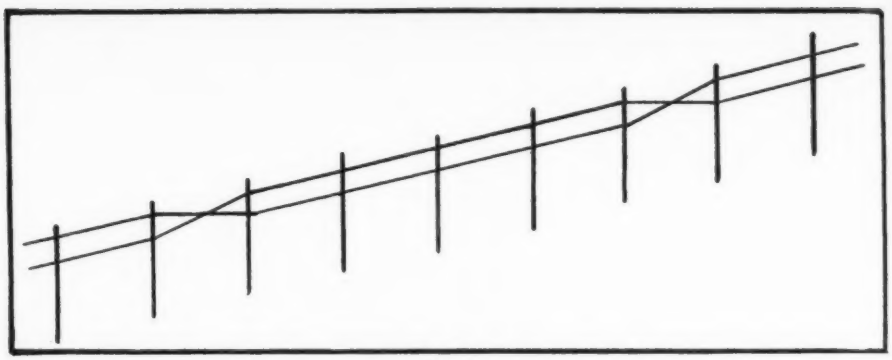

Fig. 6

This condition is shown in *Fig. 8*. Here the positive pole of the battery is connected to the earth, and the negative pole is connected to a circular conductor that is joined to several individual conductors.

Theoretically, current leaves the battery positive pole, enters the earth and radiates out through the earth in all directions, returning to the battery negative pole via the grounded individual conductors.

In *Fig. 9*, "I" and "II" represent batteries, "III", a direct current dynamo, "IV," an alternating current generator and "V" a thermocouple.

These symbols illustrate an interesting phenomenon relative to the earth's conductivity. Five separate sources of electrical energy are shown with one pole of each joined to the same grounded conductor. The other pole of each source is connected to an individual wire that in turn is connected to one terminal of a piece of apparatus which is grounded. While a current from each of the five sources flows over a separate conductor to the apparatus, it apparently returns to the respective source by means of a common conductor—the earth.

About all that can be said with regard to this "earth return" theory, concerning the nature and propagation of the electric current from the five separate sources, is that there is a difference of potential between each source and the earth. Therefore, the current flows from the point of higher potential to the lower. This holds good whether there are several electrical energy sources (such as shown in *Fig. 9*), just as truly as if only one source of electrical energy were involved.

As further evidence of the importance of employing the earth in the operation of a modern telephone system, it is standard practice to thoroughly ground certain parts of the system for such distinct purposes as:

(1) Central office equipment. To provide: (a) protection for power apparatus, distributing frames, relay racks, switching equipment, power panels, etc., against the effect of lightning and high external voltage; and (b) permanently grounding one pole of the central office battery and ringing power

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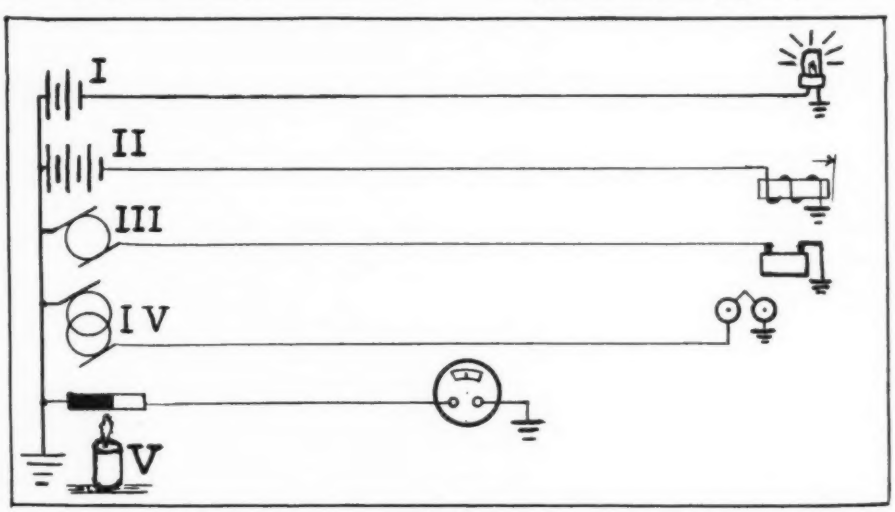
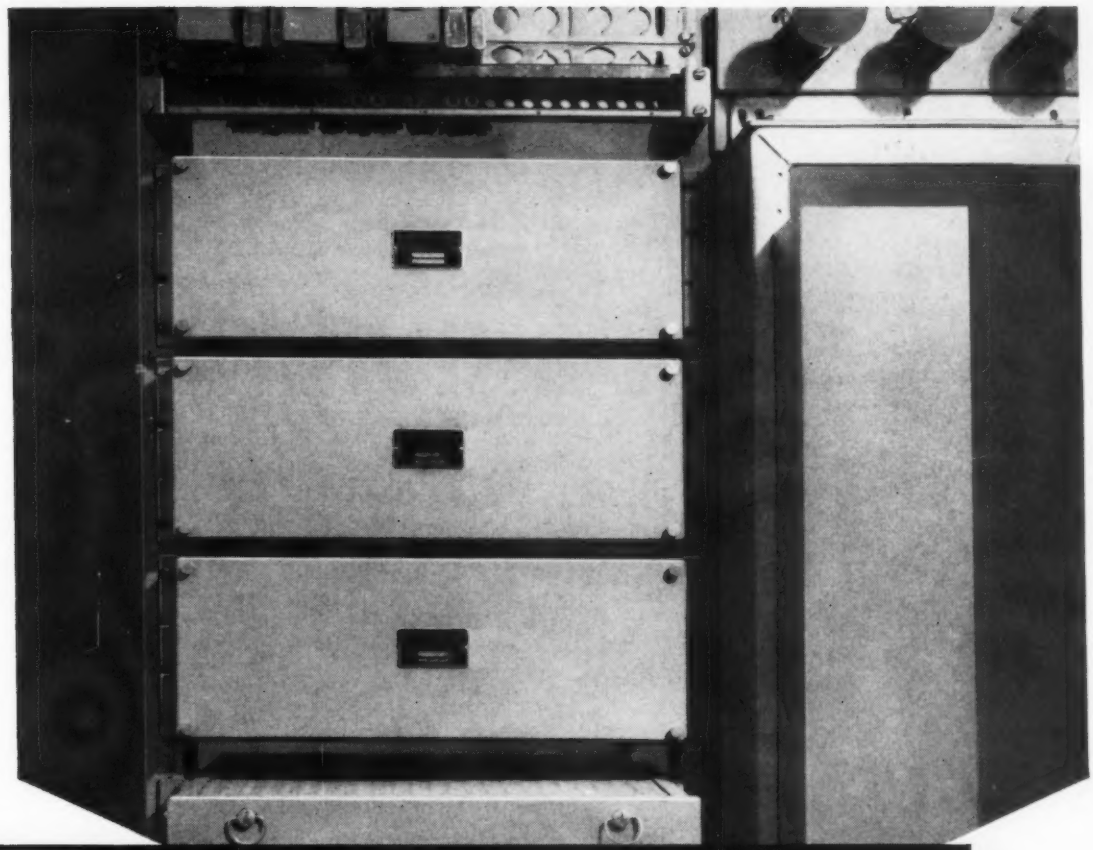


Fig. 9



LUBBOCK, TEXAS...goes dial with HOLTZER-CABOT

...and reduces ringing troubles by 90%!

Reports on ringing trouble were sharply cut when the South Plains Telephone Cooperative, Inc., installed Holtzer-Cabot generators at its Woodrow and Cotton Center stations.

The benefits of this improved performance are prompt, dependable service for customers . . . more economical operation for the company.

The ringing motor-generator sets installed in the two Texas installations have ringing frequencies of 16⅔, 25, 33⅓, 50 and 66⅔ cycles. Voltages are: 105, 105, 105, 150 and 150.

One of the outstanding features of these Holtzer-Cabot sets is the fact that the permanent magnet generators utilize Alnico, the powerful magnetic material. These generators use *no* brushes, slip rings or commutators, and thus eliminate costly maintenance!

For almost 75 years, Holtzer-Cabot equipment has been first choice of telephone companies . . . because of its proven dependability and superior performance. If you have an installation or maintenance problem — write us today.

Above photo: Holtzer-Cabot equipment as installed at South Plains Telephone Cooperative, Inc., Lubbock, Texas.

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Division of National Pneumatic Co., Inc.
Boston 19, Massachusetts

Please send me complete data on Holtzer-Cabot multi-frequency panel-type ringing machines.

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NATURE OF COMPLAINT Gets busy signal Continuously when Dialing HA1-4300
OF COMPLAINT see. off Hook
TIME CLEARED 11:30
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REMARKS ON REAR
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No matter how you hang up ... the handset simply "walks" ... right into the cradle!

Here's the *last* of those *"off-hook"* complaints!

When you standardize on Automatic's new Type 80 Monophones, you put an end to "off-hook" trouble calls caused by subscribers hanging up incorrectly.

Fewer trouble calls—less annoyance and better service for your subscribers—freeing of your maintenance men for other work: all this is yours when you standardize on Type 80 Monophones!

The reason? Type 80's ingenious "walking handset"! No matter where you hang it up, it just "walks" itself right back into the cradle where it belongs. Handset balance, plus the contours of both handset and housing, are scientifically worked out to where it's almost impossible to *make* the handset rest anywhere except in the cradle.

Of course, Type 80 offers many other advantages besides helping avoid "off-hook" complaints. Telephone men are praising its screw-type terminals (no soldering!), its unitized construction that makes maintenance easy, and its rugged components and almost breakproof housing that keeps maintenance 'way, 'way down. Subscribers are pleased with its beautiful appearance, its improved stronger ringing (with volume adjustment if desired), and its *low-sidetone* transmission that's remarkably easy to understand —even on long, noisy lines.

Use the handy data in Circular 1841 to order Type 80 Monophones today. *Address: Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7.*

AUTOMATIC ELECTRIC

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THE PLANT MAN'S Notebook

by Ray Blain, Technical Editor

THE FIRST *Plant Man's Notebook* was published on Feb. 15, 1941, and No. 700 was published on Dec. 4, 1954. This covers a long period of time and represents a lot of work for yours truly.

We have done our level best all the time to make this copy both interesting and instructive. That we have succeeded after a fashion appears to be indicated by the fact that we have received more praise than criticism. This does not not imply that we have not been criticized.

Moreover, we must admit that, for the most part, this criticism has been justified and appreciated. Although we have done our best, no one is perfect, and hard though we try, mistakes do creep in occasionally. Nor do we expect all of our readers to agree with everything we say. Differences of opinion make progress even in the Independent telephone industry.

We have received many fine letters from our readers all over the world. These letters are always extremely helpful and are sincerely appreciated.

It is our hope that we may be privileged to edit this page for many years to come and that we may continue to merit your support and interest.

• • •

The Bell System has earned the National Safety Council's highest recognition—the Award of Honor—for the third consecutive year. The records indicate that during 1953, Bell companies operated eight times safer than the average of all industries reporting to the National Safety Council.

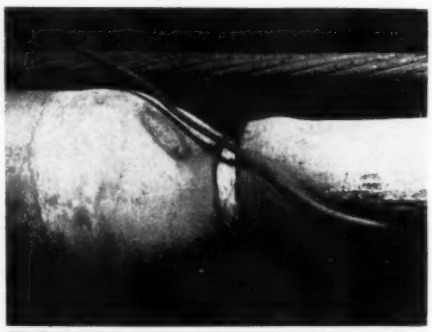
This annual award of honor is based on improvements in both the frequency and severity of accidents. Compared to the average of the three years previous to 1953, the Bell System had a 31 per cent improvement in frequency rate and a 5 per cent improvement in severity rate of all accidents.

• • •

The accompanying photographs were sent us by Paul E. Patchin of the Cable Breather Corp., Inc., Kansas City, Kan., depicting a most unusual case of cable trouble.

This cable was hung by the spinner method about 13 years ago. The sleeve was filled with the early type large grain desiccant.

It was found that the condition of



the conductors was excellent. One pair developed trouble and had to be broken down after a half-inch rainfall. Dust and cobwebs were found under the bulge at the top of the sheath. The end of the sheath was severely crystallized at the point of the break.

Mr. Patchin states that the cause of the sheath crack was primarily due to the position of the spinning wire. This cause of trouble has been eliminated by the present day method of sleeve support.

• • •

Your writer takes a trip to Philadelphia each year just before Christmas for the purpose of receiving his annual physical check-up. Our doctor and his nurse are extremely busy people and work through about five different examination and waiting rooms, and the laboratory. Each room is equipped with a key type telephone and buzzer. When a call is received, the nurse answers it regardless of where she may happen to be working.

She finds out what is wanted and if it is necessary that the calling party talk to the doctor, she calls him on the buzzer. She then talks to him on the intercom circuit and briefs him on the nature of the call. The doctor then goes on the line to talk to the calling party and the nurse hangs up.

This arrangement is certainly making efficient use of modern telephone service by busy people.

• • •

D. Reginald Tibbets, of the Moraga (Cal.) Community Telephone Association, gives us the following thoughts regarding the non-use of the letter "Q" on dials as mentioned on this page in the Nov. 13, 1954, issue:

"I understand that the letter "Q" is not used because of its probable confusion with the letter "O" and the numeral "0," As it is now, we are caused trouble aplenty with intermixing of the letter "O" and the numeral "0." Subscribers calling the local Salvation Army (4027) frequently get our test board (4627), caused by dialing the red "0" instead of the black "O."

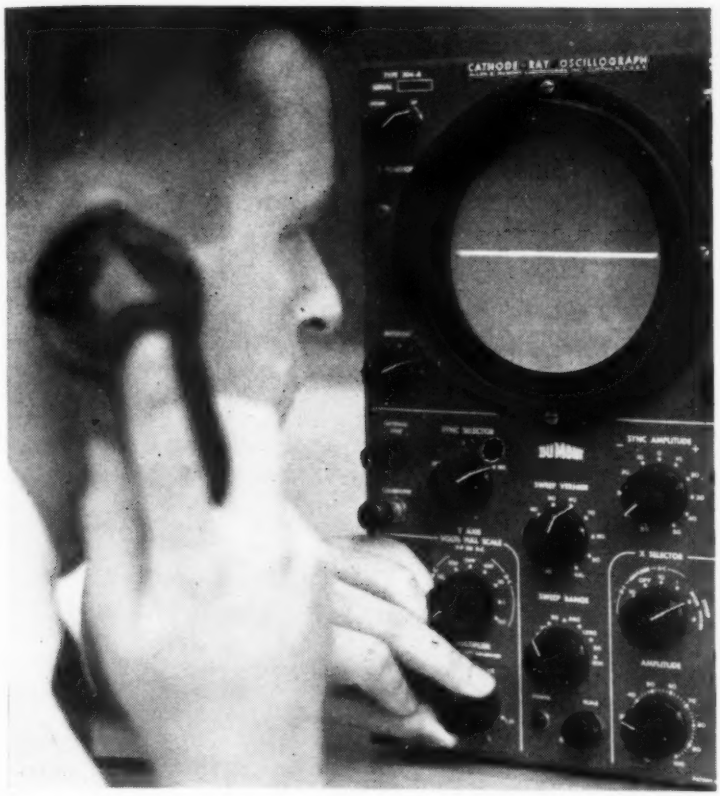
• • •

When Edward R. Murrow interviewed Secretary of Agriculture Ezra T. Benson on the TV show, "Person to Person" last fall, a crane was rented and the necessary microwave radio relay antenna was mounted at the end of the room, which then raised it to the necessary 90-foot elevation.

This is believed to be the first time that a crane has been used to obtain necessary antenna height economically and quickly for temporary TV pickup.

• • •

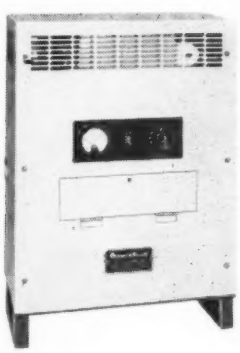
We received recently the following



Smoother, quieter power —on the way!

As each new development in Automatic's power equipment reaches the laboratory testing stage, its output is checked both by oscilloscope and by actual listening. This is just one step in Automatic's constant research, aimed at bringing you smoother, quieter, more dependable power. It's one decisive reason why so many successful companies insist on . . .

Automatic's Power Equipment



Convotrol Battery Charger—A constant-voltage, fully-automatic 50-volt charger (for 22 to 26 cells). Three sizes: 3, 6, 12 amperes. Operates on 115 or 230 volts, 1-phase AC, 50 to 60 cycles. Two or more Convotrols can be paralleled for greater output. Ask for Circular T1623.

Type 46 Battery Charger—A constant-current 50-volt charger (for 22 to 26 cells). Three sizes: 3, 6, 12 amperes. Operates on 115 or 230 volts, 1-phase AC, 50 to 60 cycles. Ask for Circular T1624.

Type 48 Battery Eliminator—Fully automatic. Supplies noiseless DC for telephone and signaling equipment. Four sizes: 3 amperes, 25 volts; 6 amperes, 25 volts; 3 amperes, 50 volts; 6 amperes, 50 volts. Operates on 115 volts, 1-phase AC, 50 to 60 cycles. Ask for Circular T1708.

Type 45 Battery Eliminator—For automatic, manual, or pushbutton intercommunicating system requiring 12 volts noiseless DC at 1.5 amperes. Operates on 115 volts, 1-phase AC, 50 to 60 cycles. Ask for Circular T1689.

Type 44 Battery Charger—For 1, 2, or 3 cells. Delivers 0.01 to 1.5 amperes. Operates on 115 or 230 volts, 1-phase AC, 50 to 60 cycles. Ask for Circular T1689.

Type 85 Battery Eliminator—Provides 150 volts noiseless DC (30 milliamperes) and 15-volt tap for test desks. Operates on 115 volts, 1-phase AC, 50 to 60 cycles. Ask for Circular T1731.

Type 85-T Battery Eliminator—For Toll Test Boards. Ask for Circular T1805.

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems

Makers of Telephone, Signaling and Communication Apparatus • Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions: AUTOMATIC ELECTRIC SALES CORPORATION
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XUM

letter from D. D. Lowe, general foreman of communications for the Northern Pacific Railway Co., St. Paul, Minn.

"In the Nov. 27 issue of TELEPHONY, I read with considerable interest the letter from Mr. L. K. Powley describing his experience with pipe pushing. While Mr. Powley does not definitely say so, it appears that he may have been using a point on his pipe which often results in serious deflections when small rocks are encountered.

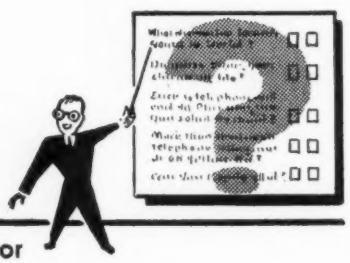
"It has been our experience that in most cases, the best alignment can be maintained through the use of a regular pipe cap on the pipe being pushed. We have used this method in many types of soil on pipes ranging from $1\frac{1}{2}$ inches to 4 inches in diameter and seldom have any deflection problems.

"However, when we have used points, we have found the results to be unpredictable. In one instance, when we used the point on a 2-inch pipe, it came up through a street. In another case, we had a 14-foot lateral deflection."

We agree with Mr. Lowe that a cap is much better than a point for pipe pushing. It is a fact, however, that many are afraid to use a cap as they seem to have the idea that a point pushes much easier.

This is not a serious consideration at the present time because modern pipe pushing equipment has ample power to push a pipe of the required size with a cap on the end.

PLANT MAN'S QUIZ



by RAY BLAIN, Technical Editor

Q. Do you know of any automatic announcer for use on a telephone system that will handle an announcement of about two minutes? In addition, will it be possible to vary the length of the announcement as required?

A. We have a recent report of an automatic recorder-announcer intended especially for applications where the messages are changed frequently and vary in length. This new unit will accept a message of any length from a minimum of about six seconds to a maximum of about 90. On special order, provision may be made for even longer messages.

An outstanding feature of this new unit is the provision for automatic adjustment of the length of the recording track to the actual length of the message.

Most earlier devices of similar function have required the attention of a skilled operator to trim and splice a tape, cut a new disk, or perform some other operation to adjust the physical length of the recording track to the time of the message.

Some other devices have had a fixed announcement interval, requiring either that the message wording be chosen to accommodate the available interval or that a "dead" time be accepted between the end of the message and the beginning of the next repetition.

Among the numerous uses proposed for the unit, the following may be suggested: In a public exchange, to provide weather forecast announcements; in a newspaper office, to announce results of sports contests; in a theatre, to make program announcements, or, in a PABX, to make announcements to the employes of the firm served by the PABX.

Operation of this new announcer has been simplified to the extent that no technical training whatever is required for the operator. The recording of a new announcement takes only the length of time required to speak the message itself.

To change the announcement, the operator throws a switch to the "record" position. Within a few seconds, a lamp lights, indicating that recording has begun. The message is then spoken into the microphone.

At the end of the message, the switch is thrown to "playback" position, and the message is heard immediately over a monitor speaker, and simultaneously over as many trunks as are equipped to transmit the message. The message is repeated indefinitely until it is changed or the machine is shut off.

This announcer is also arranged for remote operation. Such operation is exactly as described above except that a telephone handset is used instead of the microphone and loudspeaker. For this type of service, the control switch and lamp appear in a small box near the telephone instrument. Only a single pair of wires is required between the main unit and the remote control station.

The main unit would normally be located in the telephone exchange building, but it may be located elsewhere if conditions warrant. In the latter case, only a single pair of wires is required between the main unit and the central office.

When located in the telephone exchange building, the main unit occupies about 23 inches of space on a standard 19-inch rack. Located elsewhere, the unit would ordinarily be housed in a metal cabinet of appropriate size. If the unit is not located in the central office, a small rectifier to provide direct current is also required.

In keeping with telephone industry standards of quality and performance, all parts of this new announcer are designed for a maximum life and a minimum of maintenance. Disks which can be used only once are not used, nor are tapes or wires which might break or wear out in time.

The recording medium is a magnetic material on the surface of a drum. Experience with this medium has shown that its life is indefinite. The only maintenance required is periodic lubrication and occasional replacement of an amplifier tube.

• • •

Q. Will it be possible to make use of a transistor amplifier to improve the transmission on an ordinary common battery telephone?

A. Experimental work has been completed on a design by one equipment manufacturer wherein a transistor amplifier is inclosed completely inside a conventional type telephone. The only change in its regular appearance is a small control knob that protrudes from the back. Batteries or connections to the commercial power are not required as operating power is supplied by the current flowing in the line. This telephone can be used on any line from any common battery manual or dial office.

By turning the knob, the gain may be varied up to a maximum of about 12 db, compared to a telephone without an amplifier. These instruments have been used on a trial basis in several localities over an extended period of time and have proven entirely satisfactory.

Although this instrument is not intended to be an anti-noise telephone, it would prove useful in overcoming noise under certain conditions.

V V

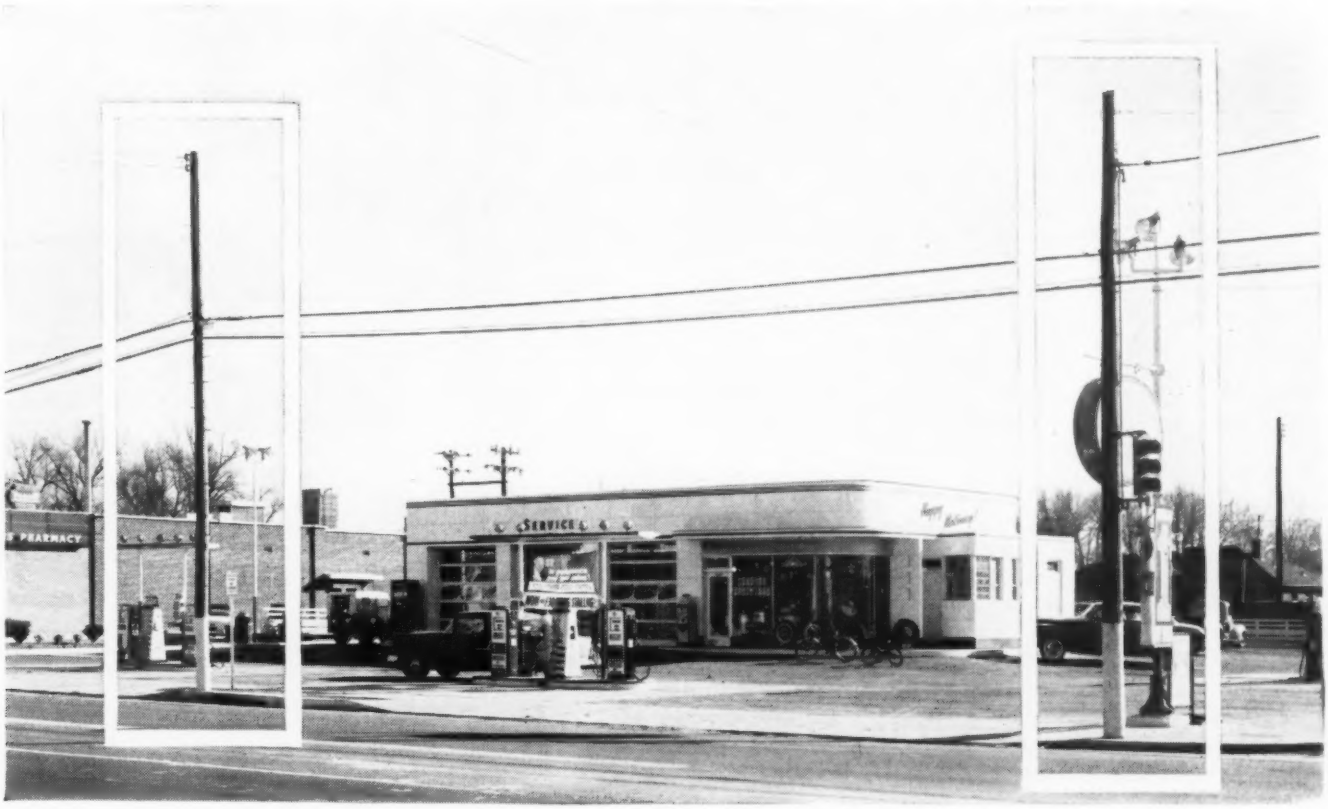
Missouri Independent Organizes

The directors of the newly organized Mutual Telephone Co., Graham, Mo., elected Fred Shamberger president, it was reported on Jan. 6.

DOW

PENTA

clean wood preservative protects joint-use poles from rot and termites—at no sacrifice in appearance



THE DOW CHEMICAL COMPANY
Dept. PE 844D, Midland, Michigan

☐ Send me additional information on PENTA-treated poles.

☐ Send me a list of PENTA-treating plants.

☐ Tell me how PENTA protection can actually be measured.

*Name*_____

*Title*_____

*Company*_____

*Address*_____

*City*_____ *Zone*____ *State*____

Clean PENTA-treated poles are equally "at home" on metropolitan street corners and busy farms. Whatever the conditions of use and exposure to rot and insects, poles treated with PENTA* wood preservative resist costly decay and termite attack *far better* . . . stay up *far longer* . . . cut replacement and maintenance costs sharply.

Another prime reason telephone, light and power companies and other major pole users specify PENTA: *appearance*. This modern, single-compound preservative leaves wood with a natural, attractive look. Clean PENTA-treated poles make good neighbors while meeting the most strict civic requirements.

Over 100 suppliers now provide PENTA-treated poles and crossarms carefully checked for proper retentions. Ask *your* regular supplier about the tested benefits of effective *PENTA-chlorophenol. And for new information about how simply PENTA protection can actually be *measured*, mail coupon to THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on DOW CHEMICALS DOW

XUM

Drive Reduces "Man-made" Troubles

By HAROLD B. McKAY

A telephone company recently conducted a short "school" for the purpose of reducing the amount of telephone trouble caused by its own workmen. The gratifying results of this school and the ideas developed can be used by any company with a similar problem.

A ONE-DAY employe training course on "man-made" troubles produced dramatic results for Pacific Telephone & Telegraph Co. in one of its districts recently when customer reports dropped abruptly after the training had been completed.

The school, which was attended by all central office, installation, repair, and construction workers in the district, was conducted jointly by a chief switchman, an installation foreman, and a construction foreman. The use of the three leaders instead of a single lecturer had the advantage of reducing fatigue on both the speakers and the audience. Further, as the speakers took turns in presenting the problems, each spoke of the branch of the business in which he specialized. The frequent changing of speakers kept the audience fresh and alert.

Each session of the school was attended by about a dozen field personnel, or whoever could be spared at the time. The sessions started off with an amusing film showing the possible effects on customers when workmen are careless in handling working circuits. In one instance, a businessman is shown placing an order for 20 boxes of something or other over his teletype.

Just as the figures "20" are being typed, the film shows a cut-in of a lineman flipping a new circuit up through the open wire line. As a result, the figure "2,000" is transmitted instead of "20." A sequel shot shows the businessman buried in packing boxes when the 2,000 cases are delivered.

This film keynoted the first phase of the subject which pointed out the troubles encountered in such "hits" and transient troubles. Made up locally was a board which comprised another part of this demonstration. This panel had two telephones connected to it by means of a piece of cable and a small terminal. Behind the board a stepper switch permitted dialing one telephone from the other.

The demonstration consisted of momentarily shorting out the terminal binding posts by the common practice of "running the count" to find a pair. This was done while a number was being dialed, and the panel showed how a wrong number would have been obtained. A further demonstration showed how a wrong number would result from a splicer skinning wires in a splice while the customer was trying to use the telephone.

After these demonstrations, a series of colored slides was shown, which illustrated poor outside plant conditions. While the motion picture and other demonstrations were calculated to show the effect of transient disturbances, the slides pointed up plant conditions which would cause failures of a larger order sometime in the future, because of hurried workmanship.

The colored slides were made locally by the foremen who taught the class and showed locations and conditions within the district. These consisted of such items as improperly fastened cable and wires which would ultimately fail because of friction against a pole or some other structure, or which were placed where other workmen could not avoid damaging them in the future. A sample of this was a drop wire which blocked climbing space to the power company's cross-arm higher up the pole.

Other interesting slides showed the result of lack of foresight in the placement of different types of plant: A terminal too easily accessible to children; another, low outside on a building which got watered along with the lawn; wires which would become abraded from opening and closing the terminal and sidewalk terminals which probably were not fully watertight.

The slides were augmented by a number of samples of cable armor which were passed around to the men. Each of the samples had caused a cable failure. Some showed holes caused by crystallization fatigue because the cable had not been fastened securely, others were the result of defective wiping operations.

In addition to the visual aids, several case histories were cited where customers' service was interrupted by troubles which were directly traceable to a workman working on or near the circuit. No attempt was made to assess blame upon any individual throughout the training, and the tone of management was that of seeking the cooperation of the workmen in reducing this type of trouble. Suggestions and comments were invited from those who attended the sessions and useful information was obtained.

It has long been known, of course, that a great deal of telephone trouble is caused by workmen in the normal course of their duties, and it is a private joke that the installers keep the repairmen employed. While not completely true by any means, the strikes which plagued the industry a few years ago demonstrated by the great lull in trouble reports, that much of the plant trouble was "man-made."

That this type of trouble is more aggravated than it need be is probably due to the great number of new men who have been placed in the industry since the war, often with something less than complete training. At one time, the new workman learned his trade from an older man, who cautioned him with a lot of "don'ts," and talked up "service from the customers' viewpoint."

The present schooling is an attempt to make up for some of this lack, and management has been greatly encouraged by the enthusiasm with which it has been received by the workmen, and the immediate improvement in the trouble performance that has resulted. (A check made one month after the training showed subscriber complaints

(Please turn to page 50)

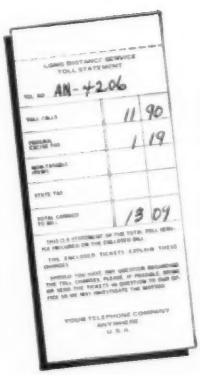
Recordak Junior Microfilmer. Rents for as little as $17.50 per month. Sells for as little as $450.

Costs so little . . . cuts billing time 45%

The Recordak Junior Microfilmer—ideal for most independent telephone companies—lets you photograph 40 or more toll tickets per minute.

Just press a button . . . and you have a photographically accurate record for a fraction of a cent.

Now, see how this operation will save time and dollars for *you*—just as it is doing for so many others.



200 calls or 2 . . . your bills will look like this when you use the Recordak Toll Billing System. No need to itemize each call because you send the tickets out with the bill . . . keep the microfilm record in your office. No extra equipment needed—the Recordak Junior has a built-in film reader, too.

Subscribers favor system . . . can recall charges readily with the tickets in hand. A big convenience for them, as well as you. Watch the complaints fall off . . . the payments come in faster. *Write today* for free illustrated folder giving details on system . . . and complete line of Recordak Microfilmers designed for varying requirements. Recordak Corporation (Subsidiary of Eastman Kodak Company), 444 Madison Avenue, New York 22, N. Y.

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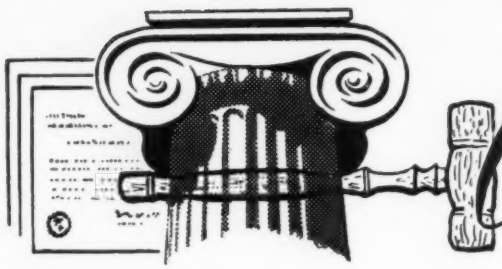
originator of modern microfilming—and its application to telephone routines

XUM



Courts and Commissions

Georgia Company Gains OK on Rate Raise, Loan, Stock Issue

Georgia Public Service Commission recently authorized a rate increase, a loan and a stock issue for the Pembroke Telephone Co.

Total local service revenues were estimated by the commission at $14,745 under the approved rates and upon conversion of the company's plant to automatic operation. It was also estimated that there would be a total of 328 stations in service upon conversion. Present magneto rates and approved dial rates are as follows:

	Magneto	*Dial*
One-party business	$3.75	$6.00
Two-party business	3.25	5.00
Four-party business	2.75	4.00
One-party residence	2.75	4.00
Two-party residence	2.25	3.50
Four-party residence	2.00	3.00
Rural multi-party		
Business, 0-2 miles	3.00	4.00
Residence, 0-2 miles	2.00	3.00
For each additional 2 miles or fraction thereof	0.25	0.25

The Pembroke company's loan authorization covered one from Stromberg-Carlson Co. in the amount of $60,000 and payable within 20 years from the date of the final note as issued with respect to the loan.

The company's issuance of 344 shares of $100 per share par value common stock also was approved.

V V

Missouri Independent Given OK On Purchase and Stock Issue

Two cases filed on Jan. 20 with the Missouri Public Service Commission were:

The joint application of A. L. Shopper and Lottie M. Shopper to sell, and the K.L.M. Telephone Co., a corporation, to purchase, the Rich Hill Telephone Co.

Application of K.L.M. Telephone Co. for authority to issue 550 shares of common stock without nominal or par value.

V V

Kansas Company Buys Another

The Overbrook (Kan.) Telephone Co. has been purchased by the W. E. Gault Dial Telephone Company, Inc., it was stated on Jan. 15 by Willard Cobb, former owner. Overbrook subscribers will get an automatic system within two years, he said. Mr. Cobb will remain in charge of the Overbrook system.

V V

Illinois Bell Asks Rehearing Of $24,900,000 Rate Plea

The Illinois Bell Telephone Co. has asked the Illinois Commerce Commission for a rehearing in its plea for a raise in rates, it was reported on Jan. 22 (TELEPHONY, Jan. 22, p. 28).

A week before, the commission denied the company's request for a new schedule that would have provided increased revenue of about $24,900,000 on an annual basis.

In its new petition, Illinois Bell asserted that the commission had 47 errors in its order denying any increase in rates.

V V

Kansas Cooperative Granted Authority to Operate

The Kansas Corporation Commission on Jan. 26 approved plans of a newly formed central Kansas telephone cooperative to organize and operate a half-million-dollar communications system serving six communities.

The commission gave a go-ahead to the Golden Belt Telephone Association, Inc., La Crosse, to provide automatic service to 1,000 subscribers in the towns of Albert, Alexander, Nekoma, Rozel, Rush Center and Timken.

Six small companies now furnish magneto service to approximately 750 telephones in the area.

The association will borrow $515,000 from the Rural Electrification Administration and will raise an additional $5,450 from membership certificates.

It will buy the Alexander Telephone Co., the Farmers Telephone Co., Rozel, and four other companies.

V V

EAS Rates Approved In Oregon

The Oregon Public Utilities Commissioner on Jan. 25 ordered that rates for Portland extended area service in the Gresham-Troutdale exchange area of the West Coast Telephone Co., Everett, Wash., shall be the rates charged for exchange service in the Portland exchange of the Pacific Telephone & Telegraph Co.

V V

Jury Awards $15,000 in Death Of Telephone Installer

A jury verdict for $15,000 for the death of Henry R. Shafer, Western Electric Co. installer who was electrocuted while at work, was returned on Jan. 26 in St. Louis in the court of Circuit Judge William H. Killoren.

The verdict was against Southwestern Bell Telephone Co., on whose premises Mr. Shafer was killed on July 14, 1952. He came in contact with a fuse box, evidence showed. The suit was brought by his mother, Mrs. Edith Shafer, with whom Mr. Shafer made his home.

V V

Ohio Legislature Receives Bill On Emergency Party Line Use

In Ohio, both the House and Senate received bills on Jan. 25 to give a telephone subscriber the right to demand use of a party line in an emergency—medical, fire or police.

The proposals include fines for those who refuse to yield a telephone circuit for emergency use. But they also include fines for those who concoct false emergencies just because they are tired of waiting for another party to finish a conversation.

V V

Telephone Rate Reconsideration Refused in North Carolina

The North Carolina Utilities Commission refused on Jan. 25 to reconsider a $2,595,000 annual rate increase it awarded Southern Bell Telephone & Telegraph Co. late last year.

The commission's move left State Attorney General Harry McMullan with 20 days in which to decide whether to carry the case back to the state supreme court for a second time.

McMullan had filed for reconsideration on Jan. 6. In a petition entered in behalf of the state and the rate-paying public, he contended that the commission's rate-raising order of Dec.

17 was unwarranted and should be rescinded.

The North Carolina rate case has been in controversy for more than two years. It opened in July, 1952, when Southern Bell applied for $3,426,700 more a year. In April, 1953, the commission allowed $1,648,056. Both the attorney general's office and the company appealed. Last Jan. 29, the supreme court remanded the matter to the commission with the suggestion that the commissioners could consider evidence which might be favorable to the public.

The court said the commission should determine what constitutes a fair value of the company's investment, what would be a fair return on that figure and what rates would be necessary to provide the fair return.

The second round of hearings opened last June. By then, Southern Bell had revised its request and was asking an additional $4,795,344. Finally, on Dec. 17, the commission let the company keep the $1,648,056 and added $2,595,000.

V V

Illinois Court Awards Damages In Cable Severance Case

The Illinois Bell Telephone Co. was awarded damages of $1,645.83 on Jan. 6 in Rockford (Ill.) Circuit Court as a result of an incident four years ago in which a construction machine sliced a telephone cable and cut telephone service to 590 Rockford subscribers.

Circuit Judge William R. Dusher ordered the payment made to the telephone company by the Chas. G. Ind Co., owner of the machine which was digging a storm sewer trench when the mishap occurred on Sept. 16, 1950.

The decision reverses a circuit court ruling of January, 1953, when the contractor was found not guilty of negligence in the accident.

That ruling, however, was appealed to the Second Appellate Court in Ottawa, and eventually was reversed. The case then was returned to Rockford for retrial.

V V

Nebraska Commission Approves Rate Increase for Independent

The Nebraska Railway Commission approved an application for rate increases of the Danbury-Lebanon Telephone Exchange, Danbury, on Jan. 18 (TELEPHONY, Nov. 13, p. 38). The new rates become effective Feb. 1.

Increases range from 75 cents to $1.00 per month for metallic service, with no increase granted for grounded service. Total revenue under the new rates is estimated to be $8,905, with expenses of $8,501 exclusive of $243 in taxes. This will result in a net return of 0.63 per cent on an adjusted net book rate base of $25,330, which includes an allowance for cash working capital, materials and supplies.

The commission's order states that as additional lines of the company are changed from grounded to metallic the new rates may be placed in effect. This will result in additional revenue later on. However, the company's investment and its maintenance expense will also increase.

At the time of the application the company was serving 240 subscribers at Danbury, Lebanon and Marion, Neb., through one central office at Danbury. Of these, 154 were receiving grounded service.

In a public hearing, the company said that additional revenue was needed to convert lines to metallic service and it proposed that switchboard operators' wages be increased.

V V

Kansas Independent Sold to Owner of Other Exchanges

Approval of the sale of the Erdman Telephone Co., at Arcadia, Kan., by Phil D. Erdman to Vernon Higginbotham was granted by the state corporation commission as of Jan. 6 (TELEPHONY, Jan. 8, p. 36).

Mr. Higginbotham also operates exchanges at Walnut and Mulberry.

V V

Washington Company Sells $3,000,000 Bond Issue

West Coast Telephone Co., Everett, Wash., sold at par 3 million dollars of its 3⅜ per cent first mortgage bonds, due 1980, to two insurance companies, it was reported on Jan. 24 (TELEPHONY, July 3, 1954, p. 30).

John Hancock Mutual Life Insurance Co. and Equitable Life Assurance Society of the United States were purchasers of the securities. Proceeds were used to pay off short-term bank loans.

V V

Brazilian City Lacks Bidders For Telephone System

The city of Porto Alegre can't find anyone who wants to operate its telephone system. The deadline date for receiving bids has passed, and the municipal government reports there weren't any bidders. Porto Alegre is a seaport in the state of Rio Grande do Sul, near the Uruguayan border.

City officials say a number of firms showed an interest until they read the fine print in the concession contract. One clause requires that all new equipment, installations and other assets of the concessionaire become the property of the city of Porto Alegre when the contract expires. This clause, which is now being included in all public utilities contracts throughout Brazil, is considered a major obstacle to improvement of the Brazilian power and communications systems by private enterprise.

V V

Nevada Independent Sells $5,500,000 Bond Issue

Southern Nevada Telephone Co., Las Vegas, sold 4 million dollars of first mortgage 4½ per cent bonds, due 1979, and 1.5 million dollars of general mortgage 5¼ per cent bonds, due Oct. 1, 1964, privately to institutional investors.

Dean Witter & Co. arranged the financing. The telephone company will use the proceeds to retire debt and for expansion and improvements.

V V

Two New York Companies Place Bonds With Insurance Company

Two New York Independents—the Cazenovia Telephone Corp. and the Dunkirk & Fredonia Telephone Co., Fredonia—have placed first mortgage bond issues with the Berkshire Life Insurance Co., Pittsfield, Mass., it was reported on Jan. 28.

The Cazenovia company's bond issue amounts to $250,000, due 1979, and is to be used to finance part of the cost of conversion of its common battery equipment to automatic operation.

Dunkirk & Fredonia company's $125,000 bond issue, also due 1979, will be used to refund existing bank loans and to provide funds for further property improvements.

V V

General Telephone's 1955 Plant Expansion Outlined at Meeting

General Telephone System will have more than one-half billion dollars invested in telephone plant by the second quarter of 1955. This was brought out by Donald C. Power, General system president, during his talk on Jan. 27 before 65 women analysts, bond buyers and trust department officials. This meeting "for women only" was held at the Lawyers Club in New York City.

Pointing out that 1955 expansion will exceed the record high expenditures of 1954, Mr. Power stated that more than 78 per cent of General's telephones in service will be dial operated by the end of the year.

General Telephone System expects to gain about 100,000 more telephones by internal growth during 1955, Mr. Power concluded.

XUM

Transistors Eyed for South African Telephones

Transistors may play a role in rural telephoning in South Africa, the winter general meeting of the American Institute of Electrical Engineers was told on Feb. 2 in New York City.

Farms in that part of the world tend to be large, with population low, and at present one of the telephone systems in use employs an "inert" terminal requiring no power, C. F. Boyce, of the Government Post Office, Pretoria, South Africa, said in a paper describing the South African telephone system.

The inert terminal is a most useful feature in many remote areas, Mr. Boyce said, adding that "in this system the 'active' terminal transmits the carrier which is voice-modulated at the 'inert' terminal to provide the return path. A two-channel version of the same system has recently been introduced.

"The range of the 'inert' system is limited and the high level of carrier transmitted normally limits its application to one system on a route.

"It is hoped that the transistor will make it possible in the near future to provide a rural system in which the remote terminal is supplied from a small dry battery or fed with power over the line. Such a system will probably be arranged so that channels may be added one at a time with the channels from the exchange terminating at different points. The system will probably employ 6 or 8 kilocycles per second spacing between the channels.

"If the cost proves to be sufficiently low, such a system may be used for providing customer as well as toll lines."

South Africa has nearly 600,000 telephone, of which two thirds are dial-operated mostly in the larger cities, he said.

V V

Some of Life's Complications In Towns Without Telephones

What's it like to live in a town with no telephones?

The value of telephone service to the community was graphically brought out in a story about an Independent town whose telephone company went out of business, as told in the January issue of *Telebriefs*, a miniature newspaper distributed with telephone bills by Illinois Bell Telephone Co.

Laurel, Ind., with a population of 800, has been one of the few towns in the nation without service since the Laurel Telephone Co. went out of business back in September, 1953.

In relating the trials and tribulations of life without a telephone, *Telebriefs* stated, "A grocer tells about how his business has suffered without the telephone to bring in orders. A young widow remembers a tragic night when she learned of the accidental death of her husband many hours after the accident.

"Last February, a fire threatened the main business district because help could not be called quickly from nearby communities, and Laurel's volunteer fire department was not equipped to handle the blaze.

"(Fortunately), the commission has issued a permit to two enterprising telephone construction company men who now are hard at work building a new telephone system for Laurel residents. Other telephone companies, including Indiana Bell, have offered to help with the restoration.

"Residents can look forward to the peace of mind which will come when telephone communication is reestablished. It will be sometime in 1955 before outmoded equipment can be replaced and service restored."

V V

"Where newspapers are free from government restrictions, as they are in the United States, you are free to select the reading matter of your choice. You are privileged to have a voice of protest."—West Bend (Wis.) *News*.

1955 CONVENTIONS

Minnesota Telephone Association, St. Paul Hotel, St. Paul, Feb. 14, 15 and 16.

Louisiana Telephone Association, Jung Hotel, New Orleans, Feb. 16 and 17.

Kentucky Independent Telephone Association, Phoenix Hotel, Lexington, Mar. 1.

Texas Telephone Association, Plaza Hotel, San Antonio, Mar. 14 and 15.

Nebraska Telephone Association, Cornhusker Hotel, Lincoln, Mar. 22 and 23.

Ohio Independent Telephone Association, Deshler Hilton Hotel, Columbus, Mar. 28, 29 and 30.

United States Independent Telephone Association Executives Conference, Belleview-Biltmore Hotel, Belleair, Fla., Apr. 4 and 5.

Iowa Independent Telephone Association, Fort Des Moines Hotel, Des Moines, Apr. 12 and 13.

North Dakota Telephone Association (hotel unannounced), Fargo, Apr. 25 and 26.

Wisconsin State Telephone Association, Loraine Hotel, Madison, May 4 and 5.

Indiana Telephone Association, Claypool Hotel, Indianapolis, May 11 and 12.

The Illinois Telephone Association, Pere Marquette Hotel, Peoria, May 19 and 20.

Kansas-Missouri Telephone Associations (joint convention), Town House Hotel, Kansas City, Kan., May 23 and 24.

Pennsylvania Independent Telephone Association, Pocono Manor Inn, Pocono Manor, June 1 and 2.

California Independent Telephone Association, Ambassador Hotel, Los Angeles, June 9 and 10.

New York State Telephone Association, Scaroon Manor Hotel, Schroon Lake, June 13, 14 and 15.

Oregon-Washington Independent Telephone Associations (joint convention), Olympic Hotel, Seattle, Wash., June 17 and 18.

Michigan Independent Telephone Association, Pantlind Hotel, Grand Rapids, Sept. 8 and 9.

Rocky Mountain Telephone Association, Hotel Utah, Salt Lake City, Utah, Sept. 15 and 16.

Arkansas Telephone Association, Arlington Hotel, Hot Springs, Sept. 26 and 27.

United States Independent Telephone Association (annual convention), Conrad Hilton Hotel, Chicago, Oct. 10, 11 and 12.

North Carolina Independent Telephone Association, The Carolina Hotel, Pinehurst, Oct. 17 and 18.

Oklahoma Telephone Association, Huckins Hotel, Oklahoma City, Oct. 20 and 21.

Virginia-West Virginia Independent Telephone Associations (joint convention) Hotel Roanoke, Roanoke, Va., Oct. 20 and 21.

Alabama-Mississippi Telephone Association, Thomas Jefferson Hotel, Birmingham, Ala., Nov. 14 and 15.

This mobile workshop cuts on-job cost!

Service-Utility body lockers are triple-sealed against dirt and moisture. Doors are fitted with recessed handles, slam-action catches, and keyed-alike cylindrical locks for full protection. Ladder racks, vise brackets, and pipe supports are also available, providing everything needed for every type of work.

INTERNATIONAL Trucks, with Service-Utility bodies, cut service call costs by bringing your workshop to the job. You make fewer trips, get more done per day.

The Service-Utility body provides all-steel lockers, with compartments of varying sizes, for orderly storage of all the tools, parts, and equipment needed to do a number of different jobs. Thus, there is no costly labor-time wasted in job-to-shop trips for needed or forgotten items.

And INTERNATIONAL Truck quality further lowers your operating costs. Famous INTERNATIONAL engines assure top performance with maximum economy. INTERNATIONAL Tough-Job engineering and all-truck design mean utmost dependability, long life, and lowest maintenance expense.

INTERNATIONAL Trucks with Service-Utility bodies are available in 9 models, with 77-in. body lengths for 115-in. wheelbases, 84-in. lengths for 122-in. wheelbases, 89-in. lengths for 127-in. wheelbases and 96-in. lengths for 134-in. wheelbases. GVW ratings, 4,200 to 8,600 lbs.

Ask your INTERNATIONAL Dealer or Branch for complete details on these time-saving, money-saving workshop trucks. Time payments arranged.

INTERNATIONAL HARVESTER COMPANY • CHICAGO

International Harvester Builds **McCORMICK**® Farm Equipment and **FARMALL**® Tractors...Motor Trucks...Industrial Power...Refrigerators and Freezers

See the season's new TV hit, "The Halls of Ivy," with Ronald Colman and Benita Hume, CBS-TV, Tuesdays, 8:30 p.m. EST

INTERNATIONAL® TRUCKS

"Standard of the Highway"

XUM

L. F. Roberts Named USITA Director of Information

Leon F. Roberts, formerly assistant to the president of the Illinois Telephone Co. of Bloomington, Ill., a Gary Group company, and who has held various positions with other Gary companies during the past nine years, on Feb. 1 joined the United States Independent Telephone Association as Director of Information.

The Director of Information post is a newly-created position in the USITA having been established by the association's board of directors at a meeting during the association's 1954 annual convention in Chicago. The directors' action followed a recommendation that the position be created, by a committee appointed to study the USITA personnel requirements.

The committee was composed of W. C. Henry of Bellevue, O., chairman; C. D. Brorein of Tampa, Fla.; L. W. Hill of Tarboro, N. C.; Donald C. Power of New York City, and R. E. Shotts of Chicago.

Among other duties, Mr. Roberts will be responsible for the dissemination of all public information concerning the Independent telephone industry; supervision of the USITA's national advertising program; maintenance of the association's active and associate memberships, and representing the USITA at state telephone conventions when the president cannot attend.

A former newspaper man and a leader in civic and political affairs in Pennsylvania and New York State, Mr. Roberts has been active in public relations work in the Independent telephone industry for the past 14 years.

Mr. Roberts was born in Indiana, spent his boyhood in Panama, N. Y., and later moved to Jamestown, N. Y., where he attended Lakewood High School and Jamestown Business College.

He devoted his early business career to the newspaper field, serving in various editorial capacities for newspapers in several cities in Pennsylvania. For several years he served as city hall reporter for the Jamestown *Evening Journal.*

In 1931, Mr. Roberts was appointed a member of the Jamestown City Council, to which he later was elected for a two-year term. In November, 1933, at the age of 34, he was elected mayor—the youngest mayor in the state of New York at that time. After a period as field representative and sales manager for the Jamestown Mutual Insurance Co., he was re-elected mayor in 1939 by the largest majority

L. F. ROBERTS

ever recorded in Jamestown history up to that time.

He voluntarily retired as mayor on Jan. 1, 1941, to become associated with the Jamestown Telephone Corp. as commercial manager. His commercial and public relations work for this company attracted wide industry attention for its outstanding character and effectiveness.

On Dec. 1, 1945, Mr. Roberts became associated with the Gary Group to serve as general representative, working at the Chicago headquarters for about four years. During this period he acquired a wide acquaintance in the telephone industry by attending 20 to 24 state and national telephone conventions a year, making addresses at about half of them.

In September, 1949, Mr. Roberts left the Gary Chicago offices to serve as vice president in charge of public relations for Ohio Consolidated Telephone Co. of Portsmouth, O. There he addressed numerous service clubs and organizations in various towns, conducted employe training classes in the exchanges of the Ohio company, and handled advertising and publicity.

In September, 1952, he became assistant to the president of the Illinois Telephone Co. Here his activities included closer work with the plant, traffic and accounting departments, as well as in public relations.

V V

Bell System Appoints First Woman District Manager

Mrs. Dorothy E. LaGattuta of Elmhurst, Queens, N. Y., has become the first woman in the Bell System to hold the position of district commercial manager, the New York Telephone Co. announced on Jan. 24.

Mrs. LaGattuta has been manager of the business office in Forest Hills.

Northern Ohio Co. Stockholders Elect Officers, Directors

Stockholders of Northern Ohio Telephone Co., at the conclusion of their annual meeting on Jan. 25, elected the following members to the board of directors for the ensuing year: Allan G. Aigler, John A. Aigler, Charles A. Henry and Fred G. Williamson of Bellevue; F. W. Uhlman of Bowling Green; Ira L. Porter of Oberlin; Herbert A. Erf and John S. Fleek of Shaker Heights; Robert T. Campbell of Galion; Charles H. Campbell of Ashland; John E. Wise, Dudley A. White and Wm. C. Henry of Norwalk; Herman H. Thornton, of East Lansing, Mich., and T. A. Boyd, of New York City. John S. Fleek and T. A. Boyd were newly elected directors, all others having previously served on the board.

At the organization meeting, the directors re-elected the following officers: Allan G. Aigler, chairman of the board and general counsel, William C. Henry, president and general manager, John E. Wise, vice president, and W. H. Todd, secretary-treasurer. Allan G. Aigler, F. W. Uhlman, H. A. Erf, John E. Wise and William C. Henry comprise the executive committee of the company.

V V

Restore Radio-Telephone Link From Thailand to North America

Radio-telephone service between Thailand and the United States, Canada, Cuba, and Mexico was re-established recently.

Until the outbreak of World War II, Thailand had telephone service to the United States via Berlin. This service has not been available since 1939. The new service is via Hong Kong.

V V

National Safety Council Names Industrial Department Manager

David L. Arm, dean of the school of engineering at the University of Delaware, has been appointed manager of the industrial department of the National Safety Council.

Mr. Arm became dean of the school of engineering at the University of Delaware in 1946 after extensive teaching and administrative experience at three other colleges.

V V

Southwestern Bell to Purchase

Southwestern Bell Telephone Co. officials recently confirmed the report that the company had taken an option to purchase the Morrisville (Mo.) Telephone Exchange, now owned by Coleman Dodson.

Remington Rand

BETTER BUSINESS METHODS

For Greater Profits Through Lower Costs

Flexoprint and Xerography Team Produces Information ...Telephone Directories Faster, at Lower Cost

The Peninsular Telephone Company, one of the nation's largest independents, has slashed the cost of producing accurate, up-to-date information directories, *and decreased inquiry-handling time by approximately 10%.*

Method Cuts Correction Costs

Using the Flexoprint-Xerox Method, Peninsular Telephone gains the flexibility of type setting with the economy of typewriter composition. Each correct listing is typed and proofread only once, as Flexoprint provides for unlimited directory expansion without retyping any correct standing listing. With typing and proofreading held to a minimum, Peninsular achieves the greatest possible accuracy at low cost—a *must*, considering the continuous change necessary in information directories.

Method Cuts Duplicating Costs

Once set up on Flexoprint panels, directory pages are reproduced by Xerography, in equipment manufactured by The Haloid Company. It takes only 3 minutes to reproduce a page, which saves operating time and cuts labor costs. The process requires no negatives, and creates plates that can be used many times.

Free Descriptive Folders

The Flexoprint-Xerox Method is described in step-by-step detail in folder KD749, and is discussed in actual operation at the Peninsular Telephone Company's Tampa, Florida exchange in folder KD764. Read them and see for yourself the speed, accuracy and economy the Flexoprint-Xerox Method brings to information switchboard operation.

Cashiering and Bookkeeping Functions Combined in New Customer Service Counter

This new Customer Service Counter is compact, yet so versatile it houses all record form sizes. The clerk works comfortably seated, facing the customer. Complete cashiering and bookkeeping facilities are within arm's reach, so there's no lost time or motion, no extra desk taking up valuable floor space. This unit offers outstanding economy in Commercial Office operation, where counter service is not a full time job, and still it

is easily combined with other units to contain any desired number of work stations.

The counter side gives customers ideal height for writing checks and applications, plus a continuous parcel shelf which expedites service. Several work station groupings, and other interesting details, appear in folder SC764, offered in the coupon.

Remington Rand

Room 1259, 315 Fourth Ave., New York 10

Yes, I'd like to have the literature circled.

KD749 KD764 SC764

Name_____

Title_____

Company_____

Address_____

City_____ Zone____ State_____

TEL-6

Profit-Building **IDEAS** For Business

XUM

construction and maintenance DIGEST

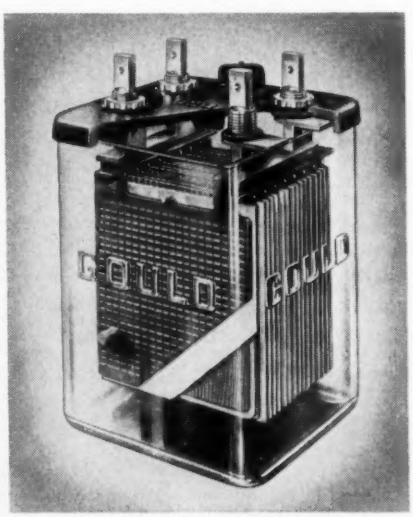
- **Insure your power**
- **Slick slack puller**
- **Wire saves poles**
- **Birth of a cross-arm**
- **Block that bolt**

Published every week to help you get the most out of your materials and supplies dollar

The few dollars you spend on *reliable* equipment today will be repaid a hundredfold in lower maintenance costs for years to come. Protect your investment with the double guarantee offered by Stromberg-Carlson. First, leading manufacturers build this equipment, and guarantee it. Second, because we recommend and sell this equipment to the telephone industry, we *also* guarantee its performance!

Insure your power supply

Because Planté batteries practically last forever... providing standby power that never fails... they're the best operating insurance you can buy. In switchgear, signal and alarm systems, or emergency light and power applications, these lead batteries have rolled up amazing performance records . . . are famous for their ability to deliver a powerful surge or a steady flow of current the instant it's needed. Make sure you're in operation . . . always. Choose Gould Planté.



A sure, dependable supply of power when you need it. That, briefly, is the story of this Gould Planté battery.

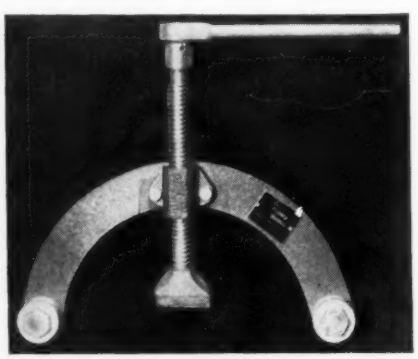
Take up slack
With a twist of the wrist

Rugged! Easy to use! Rust-protected! Here's a real he-man tool, in compact size.

The LG12 Little Giant slack puller consists of a ¾" x 2" hot-rolled steel yoke, with 2" cold-rolled steel rollers attached to the yoke by a ¾" steel shoulder stud.

Tightening screw is finest steel with 1" square thread. Ratchet handle, designed for easy action, or ½" cold-rolled steel slip handle with free slippage within the screw head. All steel cold-rolled parts are cadmium plated. Steel yoke is painted.

Width: 20". Height: 15". Weight: 18 lbs.



"Little Giant" makes cable slack pulling easier.

Save 10-15 poles per mile

A net saving of 10 to 15 or more pole structures per mile is possible where **Crapo** High-Tensile Telephone Line Wire is used in long-span construction. Fewer pole structures mean substantial savings in time, labor and material, and in maintenance.

Crapo HTL-135 makes possible spans of 350 feet in heavy, 450 feet in medium, and 500 feet in light loading areas. Its practical economy should be considered for new extensions and where old lines are to be replaced.

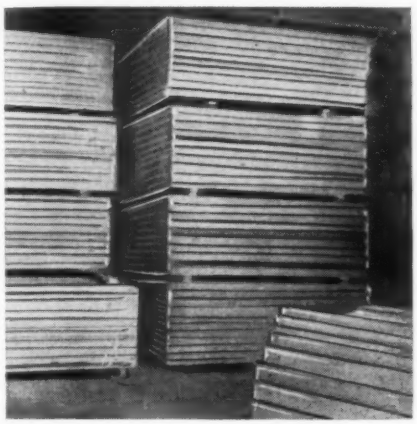
Crapo HTL-85 (No. 12 B. W. G.) permits spans of 225 feet in heavy, 325 feet in medium, and 375 feet in light loading districts; provides stronger spans on existing pole structures. Both wires possess superior telephonic transmission qualities.

Just a pile of lumber?

This is where a good cross-arm gets its start. Douglas Fir blanks, carefully chosen from select stock, are air seasoned at American Cross-Arm, Inc. to give you extra long life, resistance to stress, decay and warpage.

For those preferring pine, cross-

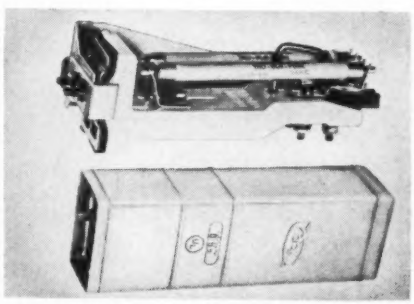
arms from selected stock are seasoned and treated according to best commercial practices.



You'll never have to cross your fingers when you've got American Cross-Arm to depend on.

Protect telephones from lightning

No larger than a good-size candy bar is the Cook 09u telephone protector shown here. But it can save you a lot of grief and you can protect single circuits, both indoor and out.



Individual circuits are protected by small unit, measuring 6"x2½"x1¾".

The body is a single piece of heavy white glazed porcelain. Lightning arrestors are two Tru-Gap dischargers, two flat carbons mounted on a copper ground, and two A-9u 7-amp. lavite fuses. Neoprene gasket locks out insects, dust, snow, etc.

Distributed by

Stromberg-Carlson®

Factory, General Offices:
ROCHESTER 3, NEW YORK

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THE OPERATOR'S CORNER

Concluded from page 25

delivered a supersonic ray gun. Another tot told him, "I've got a new baby brother and a new puppy—with tummy almost as big as yours." One unusually bright youngster, aged five, asked Santa to bring him some electric trains and added, "You'd better bring a set for Daddy, too."—And how right he was!

A daddy in Calgary, Canada, arranged to have Santa Claus call his two little daughters, Maureen McDougall, five, and Wendy, three. They heard the cheery voice and deep rolling laugh of Santa Claus in their own home. "Such nice children," said Santa, in West Lebanon.

"Now, I'd like to pierce the Iron Curtain," said Mr. Schambier, who as St. Nick of the telephone lines has been hearing Christmas requests from small fry for six years—and we hope he will.

In a recent letter to Dan Fargo, managing editor of TELEPHONY, Mr. Schambier stated, "Plans for 1955 'Santa Via Telephone' are, of course, tentative, but nevertheless, here is a part of it; that I will attempt to place a Santa in every state with loads of helpers, this way, it is hoped, to lighten the White River load. I do not get paid, nor will I accept payment, for the telephone service. After all, God gifted me with the ideal voice for this type of program. I will not sell this gift. For radio and television, yes, because of the cost of preparation, but for telephone, NO."

God bless you, Santa Claus, for your unselfish spirit! We hope you will be successful in your endeavor to bring happiness to little children throughout the nation, and perhaps to other countries, too, during the beautiful season of Christmas when we celebrate the birthday of the Little Babe of Bethlehem. I'm confident the telephone folk and the telephone companies who are privileged to assist you in your worthy endeavor will be happy to know that they, too, have a small role in your wonderful mission.

In paying tribute to Santa Claus, and his helpers at the switchboard, we must not overlook "Merry (Frances) Christmas," Mr. Schambier's wife, and four neighborhood children who, too, are Santa's helpers.

And so we ring down the curtain on Christmas 1954 once again, but may its memory linger on until a new Christmas dawns and little tikes once more place their calls to "Santa Claus" at West Lebanon, N. H.

Traffic Questions

(1) On a collect call to a paystation, if the person at the called station accepts the charge but requests the operator to bill the call to his residence telephone, who should time the call, the operator in the originating office, or the operator in the terminating office?

(2) Can Toll Credit Cards be used for Telegram Calls?

(3) What phrase should be used in answering Information calls?

(4) When should an Information operator question a customer?

(5) If the calling party asks the Information operator for a telephone giving a room number or floor in an apartment or office building, how should this request be handled?

Answers are presented on page 49.

A contract of $325,871 for outside plant construction was let recently by the Grand River Mutual Telephone Corp., Princeton, Mo. Company officials, shown with unopened bids before them, are (left to right): C. W. CHASTAIN, general manager; CLARENCE RATLIFF, secretary, and R. R. LOWRY, president. According to Mr. Chastain, there are four similar bids to be let.

XUM

Roanwell

CONFIDENCER

Neutralizes Unwanted Sounds

A highly efficient noise-cancelling carbon microphone, the CONFIDENCER serves a double purpose. It affords clearer speech transmission and at the same time neutralizes the gobbledygook of unwanted noises. It has excellent anti-feedback characteristics, and its performance makes it desirable wherever speech-garbling noises exist, and especially in factories, workshops, outdoors.

WRITE FOR DETAILED DATA SHEET

APPROVED FOR USE BY THE BELL TELEPHONE COMPANIES

R·V/C Roanwell CORPORATION

662 PACIFIC STREET • BROOKLYN 17, N. Y.

TWO TOP QUALITY ELECTRIC LACING TWINES

FROM THE SAME SUPPLIER

THE LINEN THREAD CO., INC.

418 Grand Street, Paterson 1, N. J.

Boston 10 • Chicago 10 • San Francisco 5
Baltimore 3 • Philadelphia 6 • Gloucester

MAINTENANCE TESTING

Continued from page 30

machines for signaling and other purposes.

(2) Outside Plant. To provide protection against the damaging effect of lightning and high voltage power circuits coming into contact with the telephone system outside plant. Protection of the outside plant requires that it be maintained at ground potential. This is secured by bonding, or making suitable grounded multiple connections between underground cable sheaths, and aerial cable sheaths and their supporting messengers at predetermined intervals. This forms a potential equalizing network that is electrically continuous with the underground cable to ground at the central office. Bonding the outside plant cable layout together affords several drainage points for quickly diverting surges of lightning and high voltage currents to ground, thus aiding in the reduction of cable trouble attributed to these causes.

(3) Provision of suitable signaling and protector ground at the customer's station.

Adequately protecting the central office, outside plant and station equipment through grounding, has much in common with fire prevention and flood controls—it pays.

(To Be Continued)

V V

Elementary Electricity Quiz

Below are five questions. Underline the number or numbers in parentheses you consider the right answer to each question.

(1) A PBX switchboard is furnished with a 22 volt grounded battery supply from the central office. The battery feed conductors consist of five cable pairs connected in parallel, and having a resistance of 12 ohms. Each cord circuit of the switchboard has a resistance of 70 ohms. With three cord connections up, is the current flowing (.056) (.68) (.98) (.623) (.193) amperes?

(2) The amount of non-inductive resistance wound on a PBX switchboard supervisory relay to be connected in multiple with the relay's 16.5—ohm inductive winding, to obtain a joint resistance of 12.4 ohms, should be (19.1) (23) (49.9) (63.3) (72.5) ohms.

(3) When the power delivered to a PBX switchboard equals 0.0025 electrical horsepower, the EMF 16 volts and the current required by each operated supervisory relay 0.0086 amperes, will the number of operated relays be (6) (10) (12) (14) (18)?

(4) The resistance of a piece of PBX switchboard equipment is such that a current of 0.040 amperes is produced when a 22 volt battery is connected to it. If this resistance is reduced by 300 ohms and the battery to 16 volts, will the current flowing be (.023) (.11) (.064) (.032) (.042) amperes?

(5) A certain P.B.X. switchboard trunk line relay has two windings (primary and secondary). The primary winding has 250 ohms, and is connected in parallel with a 450-ohm trunk signal lamp. The operating EMF is 16 volts.

(a) Is the current flowing in the relay primary winding (.064) (.031) (.04) (.49) (.072 amperes?

(b) Is the current flowing through the trunk lamp (.09) (.18) (.007) (.023) (.035) amperes?

See correct answers on page 51.

V V

New York Independent Places $600,000 Stock and Bond Issue

The Orange County Telephone Co., Middletown, N. Y., has placed $350,000 of 3¾ per cent first mortgage bonds and $250,000 of 5 per cent cumulative preferred stock, it was announced on Jan. 8.

The Mutual Life Insurance Co. of New York purchased $250,000 of the bonds and $80,000 of the stock. The remainder was placed with the Berkshire Life Insurance Co., Pittsfield, Mass.

The company will use the proceeds to retire bank loans, add to working capital and pay for construction.

Answers to Questions On Page 47

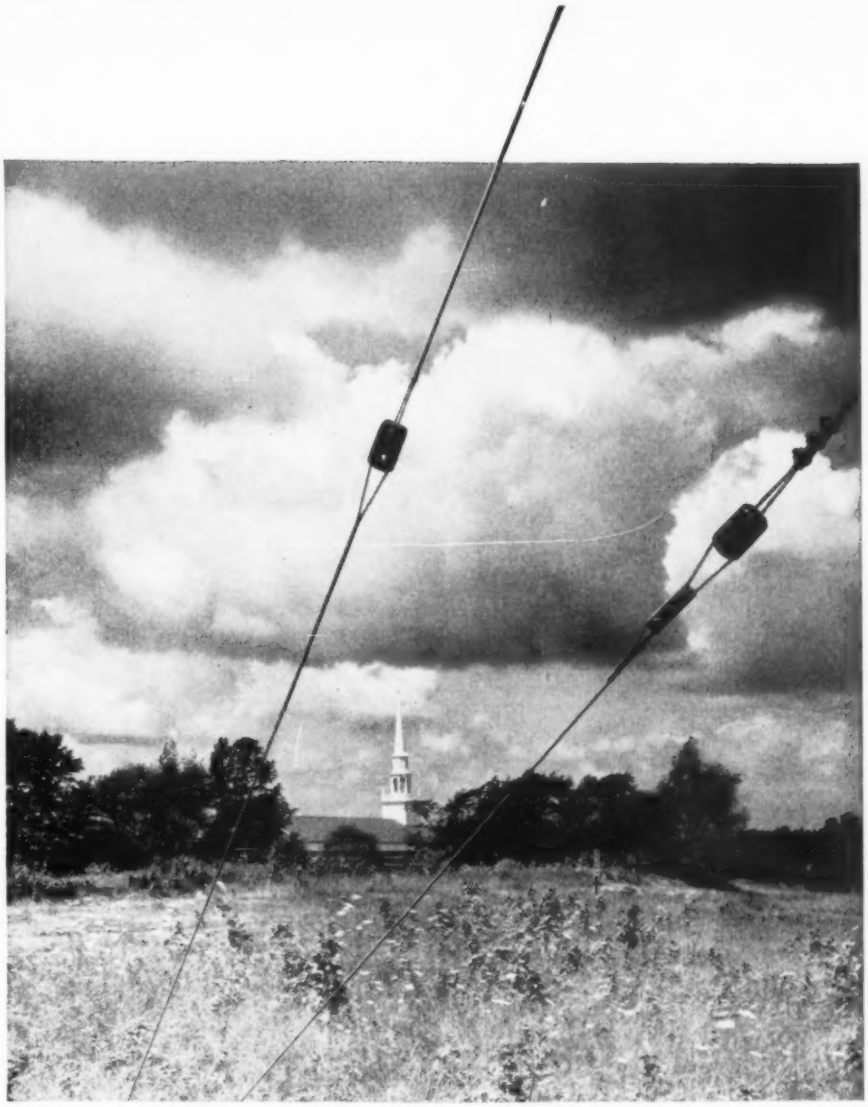
(1) If a collect call is to be charged to a third telephone, the OUT ticket is the billing ticket, therefore, the call is timed by the originating operator. In this case, the classification of the call is that of a call billed to a third station and not a collect call.

(2) No. Toll Credit Cards may only be used for receiving and placing toll calls.

(3) Answer with "Information."

(4) The Information operator should question the customer when the details are not understood, when additional details are required to start the search for the information desired, or to obtain or verify spelling.

(5) Explain that you do not have records of room numbers, saying for example, "I do not have a record of telephones by room numbers," or, "I'm sorry. I'll need the name to find that number," whichever is appropriate.



Guy-Grips*

BY PREFORMED

...Economical

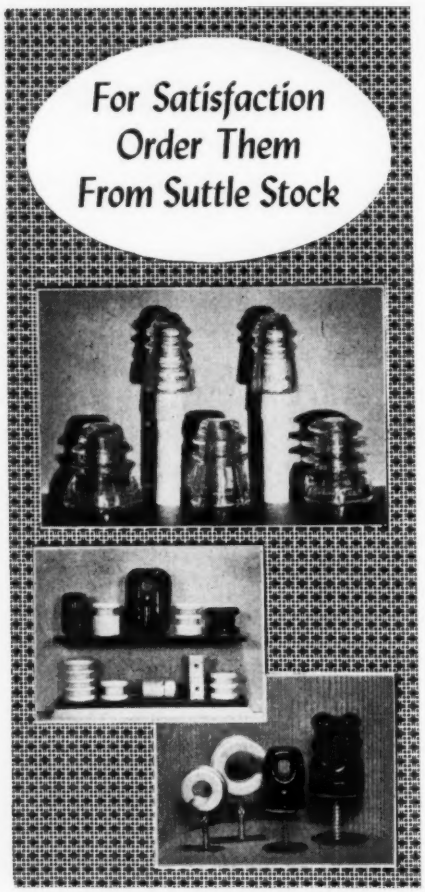
...Neat

...Efficient

*at the left

PLP PREFORMED LINE PRODUCTS CO.
5349 ST. CLAIR AVE. • CLEVELAND 3, OHIO

XUM



Hemingray Glass

Fifty years ago Hemingray glass insulators stood for quality—today they still do — the five popular telephone styles are always in stock.

Porcelain Products Knobs

Careful mixing of the clays provides a uniform quality material highly resistant to breakage — along with accurately controlled "firing" PP knobs and insulators are of the finest quality you can buy.

Pearl Screw Brackets

Made at the Pearl factory—where the "Pearl" patent on the lead sealing originated — these are the genuine product with all the pride of the inventor behind the quality of the product.

See Your SUTTLE Catalog

Serving Independent Telephone Men Since 1910

Suttle EQUIPMENT CO.

LAWRENCEVILLE ILLINOIS

DRIVE REDUCES "MAN-MADE" TROUBLES

Concluded from page 38

of "man-made" trouble were down 70 per cent.)

Among the suggestions which developed from these sessions were the following:

Never work on a customer's line without notifying him first.

When through working on the line, have it completely tested, and the customer notified that service is normal or restored.

Never work on common equipment, such as central office switches or interoffice cables without making them busy or otherwise disabled so that customers cannot have access to them. This applies even if the job to be done is only going to take "a couple of seconds."

When working on cables, terminals or other units of plant where many lines are involved, take extreme precautions to make sure that other circuits are not hit even momentarily. (It only takes a tenth of a second to lose a dial pulse and get a wrong number.)

Do not promiscuously cut in on various lines trying to identify a circuit, unless the test probe is properly equipped with a condenser.

Verify written orders against actual plant conditions before making disconnects or transfers. A clerical error can result in cutting off the wrong line.

On flips or other rearrangements, make sure that inside and outside work proceeds in step so that customers will not be called for wrong numbers while the work is in progress.

On outside plant items, watch the "little things" such as dusting off terminal face plates, closing terminal covers securely, handling wire gently in order to avoid future insulation failures.

On new plant, try to visualize what may happen to it if it is accessible to the local urchins, or where it can be damaged or hidden by something else.

Remember that customers are pretty nice people, and will respond well if treated well, and what they think of the telephone company is what they think of the people who work for it.

V V

National Safety Council Offers Three First Aid Safetygraphs

Three new safetygraphs on first aid are now available from the National Safety Council.

"How to Control Bleeding" illustrates the latest techniques in the field, including new research by the Committee of Medicine of the National Research Council.

"First Aid Treatment for Burns" discusses what to do for burns, frostbite, radiation and electric burns, as well as chemical burns of the skin and eye.

"Transportation of Injured Persons" covers examinations of injured persons to determine spine or neck injuries, and use of common industrial equipment to transport injured persons.

The safetygraphs provide a ready means of training small groups. Consisting of 12 spiral-bound pages, 18x24 inches, inserted in a brown leatherette portfolio, the safetygraph can be set on any flat surface and opened to form an easel.

On the pages facing the audience are large, clear drawings. On the back pages in easy-to-read type are notes for instructors.

Further information and prices may be obtained by writing the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

V V

Bell of Pennsylvania Names Merchandising Vice President

Henry T. Inman, vice president and general manager of the Bell Telephone Co. of Pennsylvania, western area with headquarters in Pittsburgh, has been named vice president, merchandising.

The new position, effective Jan. 1, was established on Dec. 30 by action of the board of directors.

In the new post Mr. Inman will report to W. D. Gillen, president of Bell of Pennsylvania.

As vice president, merchandising, Mr. Inman will "advise and assist in the coordinating of engineering, sales plans and rates, to achieve the greatest development of services and facilities, consistent with the company's service and earning programs."

A Bell spokesman said the position also was created to help co-ordinate marketing of services and to develop new methods and equipment to meet customers' communication requirements.

In another action, the board of directors named Herbert V. Hurlbrink, vice president and general manager of the central Pennsylvania area, to succeed Mr. Inman.

V V

Tunis Converts to Automatic

A new automatic exchange has been opened to serve the city of Tunis in Tunisia. This exchange, which began operation in December, 1954, replaces the two automatic and several manual exchanges formerly in use.

IN THE NATION'S CAPITAL

Continued from page 24

nals, or like periodicals or for radio and television broadcasting." The proposed law would carry no criminal penalties.

Committee Reorganizations

It will be a new, and considerably changed, Senate Interstate and Foreign Commerce Committee which FCC Chairman McConnaughey will have to face when the matter of confirmation of his interim appointment is taken up. The chairman of the committee is Senator Magnuson (D., Wash.). There is no indication, so far, that any substantial opposition to McConnaughey's appointment will materialize. But the lawyers are watching to see what the committee may do or say about the suggestion, from one source, that McConnaughey should not be given a place on the FCC because his law firm once represented a Bell telephone company in an Ohio state proceeding.

Chairman McConnaughey's sponsor is still on the committee as well as on the sub-committee on communications. He is Sen. John W. Bricker (R., O.). The other members of the Senate Communications Sub-committee—which has charge of all matters affecting the FCC and communications companies—are: Senators Pastore (D., R.I.), chairman; Monroney (D., Okla.), Ervin (D., N. C.), and Potter (R., Mich.).

The Senate sub-committee, as a whole, evidently expects to be pretty active during the session. It is asking for $200,000 to carry on pending investigations. Last year this committee got only $115,000 and was actually able to spend only about half of that, as of the beginning of this year.

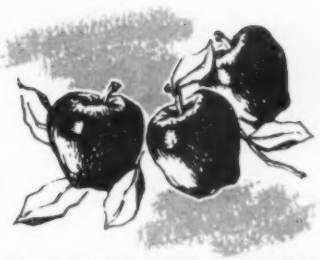
While there have been rumblings about the Senate Sub-committee on Communications going into the work of the FCC, it will be mostly about radio and television matters. No important telephone or telegraph legislation is in prospect. The administration's wire-tapping bill, already referred to, would be handled by the Senate Judiciary Committee.

Over on the House side, the full

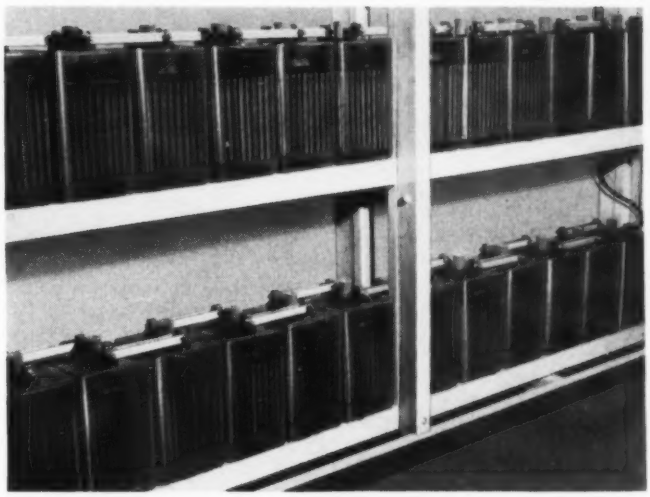
Answers to Questions On Page 48

(1) 0.623 amperes.
(2) 50 ohms.
(3) 14 relays.
(4) 0.064 amperes.
(5) (a) 0.064 amperes.
(b) 0.035 amperes

At Oregon-Washington Telephone Co.



The Oregon-Washington Telephone Co. is proud of their newest installation of C&D Batteries at the Hood River, Oregon plant. The 24 PlastiCal cells, Type PCE-540, have a 540 A. H. capacity.



It's C&D Batteries for EXTRA life

For many years to come, the C&D PlastiCal batteries at Hood River, Oregon, will provide continuous, dependable service. Here, in the heart of the world's most famous apple country, the Oregon-Washington Telephone Co. has found that C&D has the answer to telephone battery needs.

When you order your next telephone battery, specify C&D. For with C&D, you get:

1. **One-piece, permanently-sealed plastic case. Entire unit is shock-resistant and lighter and more compact than glass or rubber.**
2. **Elimination of sudden leaks due to internal stresses.**
3. **Easier maintenance, because patented Post Seal eliminates acid creepage.**
4. **Lower shipping costs. Light plastic case reduces total in-place cost.**

You can order C&D Batteries from your equipment supplier.

C&D

Write for Bulletins!

For details and specifications on C&D telephone batteries, write for Bulletins T-527, T-528.

BATTERIES, INC.
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SALES AND SERVICE OFFICES IN PRINCIPAL CITIES FROM COAST TO COAST

Among the 2,000 persons attending the open house in connection with the recent conversion to automatic operation of the Adrian, Mich. exchange of the Union Telephone Co. were (left photo, left to right) A. S. CRANE, chairman of the board, and V. E. CHANEY, director, respectively, of the Union Telephone Co., and H. D. HUNTER of Detroit, Mich. Right photo, left to right: T. A. SAUNDERS, president of the Union company; JOHN McCARTHY, chairman of the Michigan Public Service Commission, and M. A. HIGGINS, president of the Illinois Central Telephone Co. The new equipment was manufactured by the Automatic Electric Co.

membership of House Interstate and Foreign Commerce Committee is as follows: Chairman Priest (D., Tenn.) and the following Democratic representatives: Harris of Ark.; Klein of N. Y.; Granahan of Pa.; Carlyle of N. C.; Williams of Miss.; Mack of Ill.; Roberts of Ala.; Moulder of Mo.; Staggers of W. Va.; Dollinger of N. Y.; Rogers of Tex.; Dies of Tex.; Friedel of Md.; Flynt of Ga.; Macdonald of Mass.; and Hayworth of Mich. The Republican members are as follows: Wolverton of N. J.; Hinshaw of Cal.; O'Hara of Minn.; Hale of Me.; Dolliver of Iowa; Heselton of Mass.; Bennett of Mich.; Hoffman of Ill.; Beamer of Ind.; Springer of Ill.; Bush of Pa.; Schenck of Ohio; Carrigg of Pa., and Derounian of N. Y.

The House committee had not organized into sub-committees as these lines were written. But the House will doubtlessly follow the same general pattern as the Senate committee.

V V

92% Dial, Annual Report of Northern Ohio Company Shows

The annual meeting of the stockholders of Northern Ohio Telephone Co. was held at the Bellevue general offices on Jan. 25, with more than 90 per cent of the outstanding common shares represented either in person or by proxy.

Reports submitted by the management showed that the company gained a total of 3,771 telephones in 1954. At the year-end the total telephones in service at the 66 exchanges numbered 88,040. During the past year, exchanges at Carey and Grand Rapids were converted to automatic operation, and 92.46 per cent of the company's subscribers now enjoy dial telephone service. Automatic service is projected in 1955 for two of the remaining manually operated exchanges.

The volume of toll calls completed last year was 6.9 per cent greater than in 1953, with a total of more than 6,300,000 originated long distance messages. The subscriber average was 84 toll calls per telephone in 1954 as compared with 81.6 toll calls per telephone the previous year.

Total taxes, including federal income, county, Ohio excise, Ohio Public Utilities Commission, unemployment, old age and other taxes paid by the company in 1954 was $1,895,251.75, or an increase of $452,251 in taxes for the year. Total taxes amount to $22 for each telephone in service. The company's earnings did not require it

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to pay excess profits tax. Operating expenses, other than taxes, increased $256,615 for the past year. Net income of the company increased $379-453.70 due to the adjustment in subscriber service charges made in April, 1953, and the increase in telephones and toll service. Earnings from operations on common stock amounted to $2.50 per share.

Over the past twelve months the company made net additions to its telephone plant for improvement or extension of service in the amount of $1,770,970.96. Each telephone gained last year cost the company $469.63. On Dec. 31, 1954, the total book cost of telephone property and plant was $20,928,924.26, representing $242.92 for each average telephone in service.

At the end of the year 3,487 Northern Ohio company stockholders owned either preferred or common stock or both, an increase of 1,132 stockholders over the past year. Preferred dividends have been paid by Northern Ohio Telephone Co. or its predecessor, The Local Telephone Co., for more than 53 years without interruption.

The company had at year-end 766 employes, an increase for the year of 23.

Barnhart Succeeds Holley As Director of CED

Hugh A. Barnhart, president of the Rochester (Ind.) Telephone Co. and member of the board of directors of the United States Independent Telephone Association, on Feb. 1 took over as director of the Communications Equipment Division of the Business & Defense Services Administration (U.S. Department of Commerce), on a six-month basis.

Mr. Barnhart replaces Albert H. Holley of Brooklyn, N. Y., division manager of the New York Telephone Co., who served a similar length of time.

Mr. Barnhart, in addition to his telephone duties, is publisher of the Rochester (Ind.) *News-Sentinel*, and is a director of the Public Service Co. of Indiana, Inc. He was elected a vice president of the Indiana State Chamber of Commerce in 1951 and has served as a director of that organization. He was a member of the Indiana Economic Council (1941-1945); a director of the Indiana State Department of Conservation (1941-1945); a member of the Indiana Delegation Council of State Governments (1939-1943); a director of the Indiana Exercise Department (1937-1941), and a director of the Indiana State Highway Commission (1931-1932).

Mr. Barnhart graduated from Indiana University in 1915. In World War I, he served in the Army as a first lieutenant.

V V

Nearly $1,000,000,000 Property Loss from Fire in 1954

Fire damaged or destroyed an estimated $870,984,000 worth of property in the United States last year (1954), the National Board of Fire Underwriters has reported. This is 3.6 per cent less than that for 1953, when estimated monthly losses totaled $903,-400,000, which included one large industrial loss in August of 1953.

According to Lewis A. Vincent, general manager, estimated losses for December (1954) totaled $83,881,000, an increase of 36 per cent over losses of $61,663,000 reported for November (1954) and an increase also of 0.5 per cent over losses of $83,440,000 reported for December, 1953.

These estimated insured losses include an allowance for uninsured and unreported losses.

V V

Bell Connects Minneapolis TV Station to National Network

Station KEYD-TV, Minneapolis, Minn., was connected to the Bell Telephone System's nationwide network of television facilities on Jan. 11.

The Long Lines Department of American Telephone & Telegraph Co., said network programs are fed KEYD-TV over intercity facilities from either Chicago, Ill., or Des Moines, Iowa.

Local interconnection in Minneapolis between the telephone building and the station's studio was furnished by the Northwestern Bell Telephone Co.

With the addition of station KEYD-TV network programs now reach 357 stations in 231 cities in the United States.

V V

OBITUARY

ROBERT H. WALLACE JR., died in Spokane, Wash. on Jan. 27, after a long illness.

He joined the telephone division of the Stromberg-Carlson Co. in 1945, serving for five years as a salesman covering the state of Washington and surrounding territory. He was born in Spokane and attended Washington State College. Prior to joining Stromberg-Carlson he was associated with the Interstate Telephone Co., Spokane, and the Wenatchee, Wash., exchange.

Surviving are his widow and two children, Barbara Lee and Robert Scott.

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IMMEDIATE DELIVERIES!

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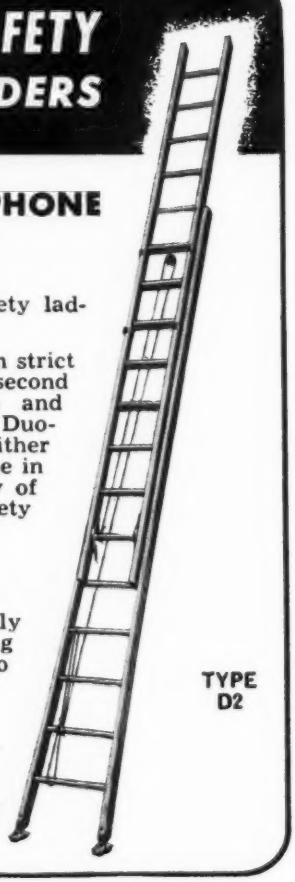

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General of the Northwest Plans Preferred Issue

General Telephone Co. of the Northwest's board of directors in a meeting on Jan. 25 approved a new financing arrangement for their company, it was revealed on Jan. 26 by W. R. Jarmon, company president.

Mr. Jarmon announced the company will redeem all existing $5.50 cumulative preferred stock which will be replaced with a 4.80 per cent issue. A registration statement for 144,000 shares of the new $25 par value stock has been filed with the Securities & Exchange Commission and the stock is to be offered for public sale through an underwriters group early in February. Mr. Jarmon revealed that the Pacific Northwest Co., Spokane, is one of the managing group of three underwriters who are handling the transaction. Harper Joy, executive vice president of the Pacific Northwest Co., was quoted as saying that his company plans to sell its portion of the securities in the surrounding territory.

The $3,600,000 issue will be used to repay $900,000 borrowed for 1954 construction expenditures and to repay a bank loan of 2½ million dollars borrowed to redeem the $5.50 cumulative preferred stock. The remainder of the proceeds from the sale of the 4.80 per cent Preferred Stock as well as $416,000 from the sale of additional common stock to General Telephone Corp., will be made available for partial payment of 1955 construction costs.

Local dealers participating with the Pacific Northwest Co. as underwriters of the new preferred issue include Murphy Favre, Inc.; Paine, Rice & Co., and Richards, Merrill & Peterson, Inc.

V V

Zumbrota (Minn.) Independent Observes 50th Anniversary

The Zumbrota (Minn.) Telephone Co., of which F. C. Marvin is manager, in celebration of its 50th anniversary on Feb. 1, has issued a 24-page booklet tracing the company's history from 1905 to the present.

Liberally illustrated, and highlighted by quotes from the Zumbrota *News* from as far back as 1895, the booklet was prepared by C. F. Marvin, plant superintendent.

V V

"The government is not an almoner of gifts among the people, but an instrumentality by which the people's affairs should be conducted upon business principles, regulated by the public needs." — GROVER CLEVELAND, *(Statement made in 1887).*

Bell System Distributes "Notes on Nationwide Dialing"

To meet wide-spread demand by the telephone industry for a single general information source on direct distance dialing, customer and operator, the operation and engineering department of the American Telephone & Telegraph Co. has prepared a reference book entitled "Notes on Nationwide Dialing." The Bell Telephone Laboratories collaborated in preparing the volume.

In addition to technical data required by manufacturing and engineering personnel, the book includes detailed notes regarding the national numbering plan, switching plan for direct distance dialing by customers and operators, equipment requirements and transmission considerations. The book should prove helpful in furnishing information needed by the telephone industry for the successful integration of nationwide dialing plans.

Copies of the book have recently been forwarded to the Bell System companies, and the United States Independent Telephone Association Subscriber and Operator Toll Dialing Committee. Independent companies will be able to obtain copies of the "Notes" through their connecting associated Bell companies.

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AUTOMATIC ELECTRIC

Federal Telephone Bill Is $100,000,000 a Year

Congressional investigators will set economy-minded lawmakers boiling soon with a report showing a whopping federal telephone bill of 100 million dollars a year, predicts Milt Freudenheim, in the Chicago Daily News. The article continues:

"Added up for the first time in recent history, the tele-communications bill (telephones, teletype, telegraph, radio), comes to 180 million dollars, according to investigators. The committee sleuths believe the Government's telephone bill could be slashed 'by one-third.' They reported their finding in a confidential briefing, pending formal submission to members of Congress later this year.

"The investigators discovered:

"• Some agencies have more telephones than employes.

"• Pentagon, with a switchboard adequate for a city of 200,000, never kept track of its total telephone expenses until ordered to do so by investigators.

"• Many agencies request appropriations for telephones, etc., year after year without knowing how much is spent for these services the preceding year.

"• General Services Administration (GSA) and the Veterans Administration (VA) have parallel message facilities to more than 50 cities.

"Although the taxpayers foot the bill, and the federal government is the world's largest customer, telephone company officials are secretive about cost figures.

"Long distance charges alone total $10,395,483 a year, the investigators learned.

"The breakdown on telephone costs for the civilian branches of government is: local calls, $7,401,760; long distance, $10,395,483; leased switchboard and equipment, $15,398,847; leased private lines, $5,469,572; extra charges on party private-line calls, $420,862.

"The total civilian government telephone cost is $39,086,524, not counting salaries of personnel. Adding telegraph, teletype and other minor expenses, the total civilian communications bill is 72 million dollars.

"Pentagon figures are kept secret because communications expenses could give insight into United States military strength if broken down.

"The committee investigators would say only that the military bill outweighs the civilian bill. The annual budget indicates a 60-40 relationship as the basis for a very conservative estimate. Hence their 100-million-dollar estimate."

V V

L. M. Berry & Co. Announces New Appointments . .

John W. Berry, general sales manager of L. M. Berry & Co., has announced the following personnel changes and appointments for the company:

Type S-1-A
Frequency Modulated
Subscriber Carrier

Delivering! Yes, but awfully slow. Our own men are making each and every installation.

Results: We will have a most complete "How to Install Book" based on our own actual experience.

We earnestly solicit your continued patience. We promise you our carrier is worth waiting for.

$1180. per Channel

McELROY
MANUFACTURING CORP.
Littleton, Massachusetts, U.S.A.

Mrs. H. B. Fine of Topeka, Kan., won first prize in the Exide Telemobile Contest conducted at the 1954 Chicago convention of the United States Independent Telephone Association. Mrs. Fine will receive a $50 United States Savings Bond from Exide industrial division of The Electric Storage Battery Co., according to E. J. Fitzmaurice, sales engineering manager. The object of the contest was to guess the number of times a miniature electrically-driven telephone truck would be propelled around a track by an Exide 3-PLX-7 telephone type storage battery mounted atop the truck. Answers ranged from hundreds to millions. Mrs. Fine's answer was only 27 more revolutions than the actual count of 4,212.

W. J. McGIRL

W. J. McGirl has been appointed southern sales manager of the territory which comprises the states of Kentucky, Tennessee, Louisiana, Mississippi, and Alabama. Since June, 1952, he has served as division manager of the state of Louisiana. He joined L. M. Berry in October, 1947. The company reports that after producing an outstanding sales record in Alabama, he was appointed district manager in Birmingham, which position he held until April, 1951. He was then appointed division manager of the same state. The following year he became division manager of Ohio, and in June, 1953, was transferred to Louisiana as division manager.

S. H. Rainey has been promoted from the southern territory office in

S. H. RAINEY

Louisville, as southern sales supervisor, to general sales training supervisor in the general offices at Dayton, Ohio. After joining the company in February, 1946, he served in supervisory and managerial positions in Alabama, Kentucky, Louisiana, and Wis-

1947-1954

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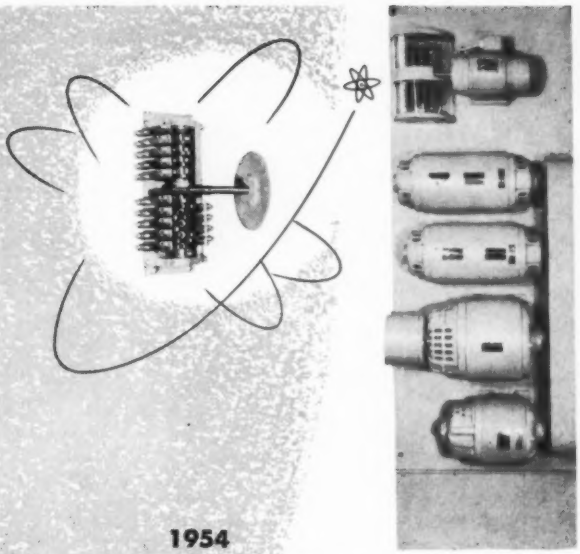
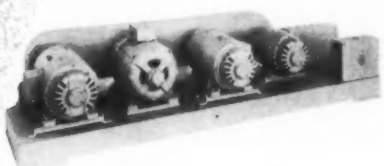


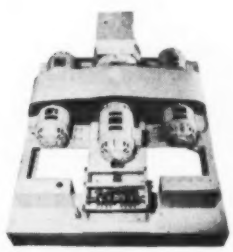
1954

Mar Vista, California. All connections at terminal board. Lubricated-for-life ball bearings throughout. Rugged, dependable construction. Equipped with coin controls — PLUS — A new and improved interrupter design. The pile-up is equipped with positive micro setting control of finger positioning. Another exclusive with ESCO



1951

Clarinda, Iowa. Simplified hook-up



1949

Oxnard, California. Improved interrupter design

1947

Rochester, New York. A new, better motor generator set

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For time-saving use KEARNEY Airseal — available in convenient sized pads, or in 10-foot rolls.

For Better Construction . . . For Safer Maintenance

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263

KEARNEY PRODUCTS

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Canadian Plant: Guelph, Ontario

consin. In June, 1953, he was promoted to southern sales supervisor from Louisiana division manager.

Also being promoted from the field to the general office is Miss Geraldine McAlpin, who as telephone sales training supervisor, will head up sales training for all new telephone salesgirls. She was formerly in the territory office in Louisville where she has served as telephone sales instructor for the southern territory since April, 1954.

Other promotions and appointments in the field include W. C. Welch to Kentucky division manager; M. F. Feeney to Alabama division manager; J. M. Bayley to Tennessee division manager; R. T. Davis to Pennsylvania division manager; R. H. Eshelman to Louisiana division manager; and H. L. Boebel to Tennessee division supervisor.

Mr. Welch started with L. M. Berry & Co. in November, 1950, as staff assistant in the general sales office. He was appointed division assistant of Louisiana in January, 1953, and later, Kentucky sales training supervisor in June, 1945.

Before going to Alabama, Mr. Feeney had served the company only in Kentucky where he was division manager. He started in April, 1947, and was made district manager in May, 1950. He was appointed division manager of Kentucky in October, 1953.

Mr. Bayley started with the company in January, 1950. He served as division manager of Mississippi before going to Birmingham as Alabama division manager.

Mr. Eshelman was hired as a salesman in Dayton, in August, 1947. Since then he has been in the Louisiana division where he served as district manager of northern Louisiana, and later southern Louisiana. Before the recent appointment he was the New Orleans district manager.

Mr. Davis was hired as a salesman in Wisconsin in August, 1948, but was soon transferred to the southern territory. In December, 1950, he was made district manager for the Chattanooga-Knoxville district.

From January, 1948, when he started with the company, to January, 1954, Mr. Boebel was located in the Wisconsin division. Before going to the general offices in 1954 as general sales assistant, he was state district manager for Wisconsin.

V V

"In all that the people can individually do for themselves, government ought not to interfere." — ABRAHAM LINCOLN.

General Electric Co. Appoints Marketing Administrator

The appointment of Harold L. Blom as manager of marketing administration for communication equipment was announced on Jan. 21 by the General Electric Co., Syracuse, N. Y.

In making the announcement, Lacy W. Goostree, manager of marketing, said that Mr. Blom will develop and carry out marketing administration programs and policies which include forecasting sales and scheduling production.

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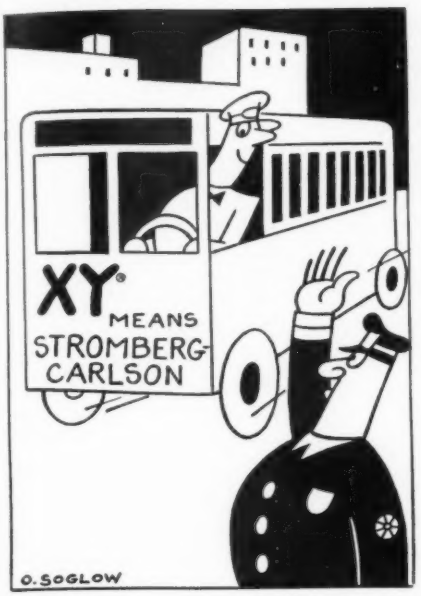

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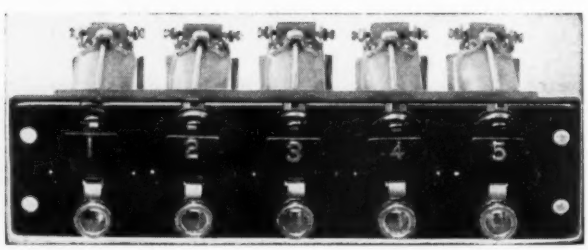

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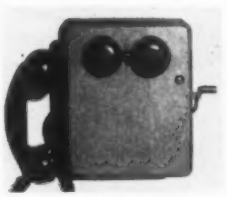

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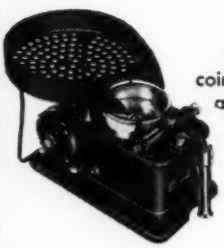

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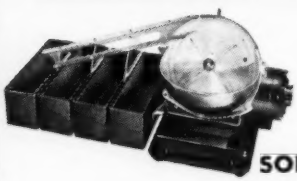

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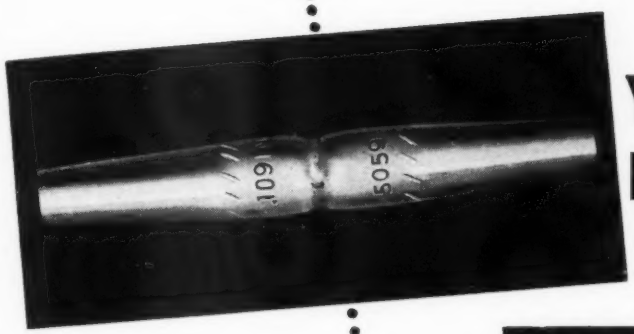

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